BRITISH DENTAL JOURNAL

VOL. XCIII, No. 2 JULY 15, 1952

Are you coming to London?

July is an important month for members of the Dental Profession. The American Dental Society of Europe is holding its 58th Meeting at the Royal College of Surgeons commencing 15th July and following this, the International Dental Congress will open at the Royal Festival Hall on the 19th July.

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July 15, 1952

BRITISH DENTAL JOURNAL

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(Incorporating the "Mouth Mirror" and the "Dental Gazette")

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NEXT WEEK —

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Orders and remittances for advertisements must reach the Journal Manager, at 13, Hill Street, Berkeley Square, London, W.1, at least 11 days before publication date. **Advertisements cannot be accepted by telephone.**

Replies to Box Numbers should be addressed Box No.—c/o B.D.J., 13, Hill Street, Berkeley Square, London, W.1. A Box Number is used in place of name and address to conceal identity of advertiser. **In no circumstances will this information be divulged by this office. Telephone messages for transmission to advertisers under Box Numbers cannot be accepted.**

Members are requested before applying for any public dental appointments advertised in the lay Press to communicate with The Secretary, 13, Hill Street, Berkeley Square, London, W.1.

COURSES

EAST Midlands Post Graduate Committee. The following two courses have been arranged to take place in Leicester: (1) CONSERVATIVE DENTISTRY. A series of five lectures and demonstrations as follows: The Biological Aspect by Professor E. B. Manley; Amalgam by C. de Vere Green, Esq., F.D.S.; Gold Inlays by J. K. Holt, Esq., F.D.S.; Direct Acrylic Fillings by G. H. Leatherman, Esq., F.D.S.; Jacket Crowns by H. A. Pitt-Roche, Esq., L.D.S. The course will be from 6.30 p.m. to approximately 8.30 p.m. on successive Thursday evenings commencing October 2. The fee for the course will be £5 5s. (2) PERIODONTIA. This course will consist of lectures and clinical demonstrations given by Mr. A. F. Stammers and Dr. E. C. Fox. There will be eight two hour sessions on successive Wednesdays, commencing September 10 at 6.30 p.m. The course will be limited to ten students and the fee will be £8 8s. Applications for either course, together with the fee, should be sent as soon as possible and not later than August 15, to the Hon. Secretary, Mr. K. A. Smith, 23, Fosse Road Central, Leicester.

PUBLIC APPOINTMENTS

THE University of Manchester. Turner Dental School. Applications are invited for the post of ASSISTANT LECTURER in DENTAL SURGERY. Salary on a scale £700—£1,000 per annum; initial salary according to qualifications and experience. Membership of F.S.S.U. and Children's Allowance Scheme. Applications should be sent not later than July 26, 1952, to the Registrar, the University, Manchester 13, from whom further particulars and forms of application may be obtained.

UNIVERSITY of London. King's College Hospital Dental School. Applications are invited from registered Dental Practitioners for two whole-time DEMONSTRATORSHIPS in the CONSERVATION and PROSTHETIC DEPARTMENTS, both to begin on September 1. The posts are tenable for one year in the first instance and renewable for a second year. The salary £450 x £100—£550 per annum, plus F.S.S.U. and family allowances. These appointments give ample opportunity for obtaining advanced knowledge and experience in these subjects and are intended as a preliminary training for anyone wishing to take up an academic career. Applications should be addressed to the Sub-Dean of the Dental School, Denmark Hill, S.E.5.

UNIVERSITY of Otago, Dunedin, New Zealand. Applications are invited from Dental Practitioners for the position of SENIOR DENTAL SURGEON at the Dental School and Hospital. In addition to taking charge of the Hospital section, the successful applicant will be responsible for the clinical teaching of Oral Diagnosis, and will have the status and salary of a Senior Lecturer. Salary range £1,360—£1,560. Further particulars and information as to the method of application may be obtained from the Secretary, Association of Universities of the British Commonwealth, 5, Gordon Square, London, W.C.1. The closing date for the receipt of applications is September 1, 1952.

EASTERN Regional Hospital Board (Scotland). Dundee Dental Hospital. Applications are invited for the following appointments: SENIOR REGISTRAR in ORTHODONTICS at Dundee Dental Hospital; REGISTRAR in ORAL SURGERY at Dundee Dental Hospital and at Maryfield Hospital, Dundee (a teaching hospital of 400 beds), to work under the direct supervision of the Professor of Dental Surgery. Salary and Conditions of Service in accordance with National Agreement. Further particulars and forms of application from the Secretary to the Board, "Bracknowe," 430 Blackness Road, Dundee, with whom applications must be lodged not later than July 29, 1952.

THE London Hospital Dental School. Applications are invited for the post of full-time JUNIOR ASSISTANT to the DEPARTMENT of DENTAL PATHOLOGY. Duties will be to assist with the teaching in the Parodontal Clinic. Opportunities and time will be available for study and research. Initial salary £700/900 per annum according to experience, together with membership of the F.S.S.U. and family allowances of £50 per annum for each child. The appointment is for one year in the first instance. Applications (three copies) giving the names of two referees, should be forwarded to the Secretary, The London Hospital Medical College, Turner Street, E.1, not later than fourteen days after the appearance of this advertisement. July 3, 1952.

THE London Hospital Dental School. Applications are invited for the post of full-time ASSISTANT in the DEPARTMENT of CONSERVATIVE DENTISTRY. Initial salary £700/900 per annum according to experience, together with membership of the F.S.S.U. and family allowances of £50 per annum for each child. The appointment will be for one year renewable up to a maximum of three years in this grade. Applications (four copies) giving full particulars of previous experience and qualifications, together with the names of two referees, should be forwarded to the Secretary, The London Hospital Medical College, Turner Street, E.1, not later than fourteen days after the appearance of this advertisement. July 3, 1952.

SOUTHEND Group Hospital Management Committee. (Comprising General Hospital, Rochford (603 beds); General Hospital, Southend-on-Sea (255 beds) with large Outpatients Department; and Westcliff Hospital (126 beds); and Victoria Hospital (35 beds).). Applications are invited for the appointment of DENTAL HOUSE SURGEON (vacant August 15, 1952) for duties in the hospitals in the Group. The post, which is tenable for six months, is in accordance with the salary scale for that of House Officer, ranging from £350 to £450 per annum according to previous number of appointments held. The post is recognised for the Fellowship in Dental Surgery of the Royal College of Surgeons. Applications, together with copies of recent testimonials, should be forwarded to the undersigned by July 22, 1952. J. C. Field, Secretary, General Hospital, Southend-on-Sea.

HER Majesty's Colonial Service—Brunei. A DENTAL OFFICER is required in Brunei to undertake general dental duties. Candidate selected may be required to travel to various government centres in Brunei. Appointment will be on agreement for two-three years in the first instance. Basic salary scale, ranges from £1,050 per annum to £1,260 per annum, plus expatriation pay of £210 per annum, making a total salary of from £1,260 to £1,470 per annum. Starting point in the scale is determined by the candidate's age, qualifications and experience. A cost of living allowance is payable at the rate of 30 per cent of basic salary with a maximum of £252 per annum for single men, and 50 per cent of basic salary with a maximum of £490 per annum for married men. Quarters are available at a rental of £56 per annum. Free passages are provided in both directions for officer, wife, and up to 3 children under the age of 10 years. Local leave is permissible and generous home leave is granted on completion of agreement. There is no income tax. Private practice is not permitted. Candidates must possess qualifications registrable in the United Kingdom. Application forms can be obtained from the Director of Recruitment (Colonial Service), Colonial Office, Sanctuary Buildings, Great Smith Street, London, S.W.1 (quoting reference No. 27072/27/52).

LONDON County Council requires Dental Surgeons as whole-time DENTAL OFFICERS in priority dental service. £800—£1,250 (commencing salary dependent on experience). Pensionable. Private practice outside normal clinic hours permitted subject to prescribed conditions. May be opportunities for additional paid evening work. Further details from Medical Officer of Health (PH/D1), County Hall, London, S.E.1. (588.)

SOUTH Shields Education Authority. Appointment of Dental Officer. Applications are invited from Dental Surgeons for appointment as DENTAL OFFICER. Salary scale £800 x £50—£1,250 p.a. The commencing salary will be fixed at such point in the scale as the experience and service of the applicant may merit. Duties are mainly in connection with the School Health Service. The person appointed is required to devote the whole of his time to the duties of the appointment and is not permitted to engage in private practice. The appointment is superannuable. Forms of application may be obtained from the undersigned to whom completed forms should be returned within 14 days of the appearance of this advertisement. A. J. W. Jeffery, Director of Education. Education Department, Town Hall, South Shields. June 23, 1952.

ROCHDALE County Borough. Education Committee. Appointment of DENTAL OFFICER. Applications are invited from registered Dental Surgeons for the above appointment. Salary in accordance with the Dental Whitley Council (Local Authorities) Scale £800 x £50 to £1,250 per annum, previous experience to be considered in fixing the initial salary. The duties, under the general direction of the Medical Officer of Health and Senior Dental Officer, will be mainly concerned with the inspection and treatment of school children and some duties in connection with the ante-natal and Child Welfare Services. The post is superannuable and the successful candidate must pass a medical examination. Canvassing will disqualify. Candidates must disclose whether they are related to any member or senior official of the Council. Applications stating age, qualifications, experience and the names of two referees, should be submitted to the Medical Officer of Health, Public Health Offices, Baillie Street, Rochdale, as soon as possible. K. B. Moore, Town Clerk. Rochdale. July 1, 1952.

CHESHIRE County Council. Assistant Dental Officers. Applications are invited from registered Dental Surgeons for vacancies as whole-time DENTAL OFFICERS to work in and around the following districts: Crewe; Northwich; Stalybridge and Dukinfield. Salary within the scale fixed by the Dental Whitley Council, i.e. at the rate of £800 x £50—£1,250 per annum, with travelling allowance according to the County scale. The commencing salary will be fixed at a point on the scale taking into consideration the previous experience of the officer concerned in local government service and private practice. The appointments are subject to the Local Government Superannuation Act, 1937, and to satisfactory medical certificates. Forms of application may be obtained from the undersigned, to whom they should be returned immediately. Arnold Brown, County Medical Officer. 24, Nicholas Street, Chester.

MIDDLESEX County Council, County Health Department. DENTAL OFFICER, registered Dental Surgeon, required initially in Area 1 (Edmonton and Enfield). Private practice not allowed. Duties include inspection and treatment of mothers and young children and school children. Salary scale £800 x £50—£1,250 p.a. inclusive. Previous experience may determine commencing salary as Whitley Council recommendations. Established, subject to medical assessment. Prescribed conditions. Apply stating age, qualifications, experience, 2 referees to Joint Area Medical Officer, Town Hall, Edmonton, by July 29 (quoting K. 970, *B.D.J.*). Canvassing disqualifies. C. W. Radcliffe, Clerk of the County Council.

SOMERSET County Council. Appointment of DENTAL OFFICERS. Applications are invited from registered Dental Surgeons (male or female) to fill vacancies in various parts of the County. Duties will be mainly concerned with inspection and treatment under the School and Maternity and Child Welfare Dental Services, under the supervision of the Chief Dental Officer, and in most cases will be carried out under excellent conditions in well equipped fixed clinics. The work is of a varied and interesting nature, opportunity being given to Dental Officers to obtain experience in orthodontics and general anæsthetics. The Scale of Salaries for Dental Officers is £800 rising by £50 per annum to a maximum of £1,250. Previous experience in private practice or under another local authority will be taken into account in fixing initial salary. Travelling and subsistence expenses will be payable where necessary. Appointments are superannuable and subject to the passing of a medical examination. Application forms, with further particulars are obtainable from the County Medical Officer of Health, County Hall, Taunton.

CITY of Birmingham Education Committee. School Dental Surgeons. Applications invited for full-time SCHOOL DENTAL SURGEONS. Salary £800 x £50—£1,250. Commencing salary according to experience. Full particulars and application form on receipt of a stamped, addressed foolscap envelope. Completed applications should be returned by July 28. Canvassing disqualifies. E. L. Russell, Chief Education Officer. School Health Service, 74/75, Broad Street, Birmingham 15.

BEDFORDSHIRE Education Committee. Luton Committee for Education. School Dental Surgeons. Applications are invited for the positions of SCHOOL DENTAL SURGEONS. Applicants must be registered. The salary scale is £800 per annum rising by annual increments of £50 to a maximum of £1,250 per annum. The commencing salary will be fixed according to the experience of the successful candidates. The appointments will be subject to the provisions of the Local Government Superannuation Act, 1937, and the successful candidates will be required to pass a medical examination. Applications, together with the copies of two testimonials, should be addressed to the undersigned within two weeks of the appearance of this advertisement. E. O. Cutter, Borough Education Officer. Education Office, 63-69 Guildford Street, Luton.

COUNTY Borough of Southend-on-Sea. ASSISTANT SCHOOL DENTAL SURGEON. Applications are invited for the above appointment. Salary £800 x £50—£1,250 per annum. Full particulars and application forms obtainable from the School Medical Officer, Municipal Health Centre, Warrior Square, Southend-on-Sea, to whom they should be returned not later than 14 days after the appearance of this advertisement. Archibald Glen, Town Clerk.

WILTSHIRE County Council. Appointment of Assistant County Dental Officer. Applications invited from Dental Surgeons for the appointment of ASSISTANT COUNTY DENTAL OFFICER, Salisbury area. Salary scale £800 x £50—£1,250 per annum. Conditions of service in accordance with the Dental Whitley Council (Local Authorities). The appointment is superannuable, terminable by one month's notice on either side. Forms of application may be obtained from the undersigned. P. A. Selborne Stringer, Clerk of the Council. County Hall, Trowbridge. June 1952.

CUMBERLAND County Council. ASSISTANT DENTAL OFFICERS. Applications are invited from Dental Surgeons for the above posts at salaries within the range £800 x £50—£1,250 per annum, plus travelling and subsistence allowances, according to scale. The appointments are subject to the provisions of the appropriate superannuation scheme. Forms of application and conditions of appointment are obtainable from the County Medical Officer, 11, Portland Square, Carlisle, to whom applications should be submitted. G. N. C. Swift, Clerk of the County Council. June 12, 1952.

EAST Riding of Yorkshire County Council. Appointment of whole-time ASSISTANT DENTAL OFFICERS. Applications are invited from registered Dental Surgeons for the above appointment. Salary £800 per annum rising by annual increments of £50 to a maximum of £1,250 per annum. Travelling and subsistence allowance will be paid in accordance with the Council's scale. The duties attached to the post will comprise the dental inspection and treatment of school children and dental work in connection with other County Health Services under the direction of the County Medical Officer of Health under the supervision of the Senior Dental Officer. The appointment will be subject to the provisions of the National Health Service (Superannuation) Regulations, 1947, and the successful candidates will be required to pass satisfactorily a medical examination. Applications stating age, qualifications and experience, accompanied by copies of three recent testimonials should be sent immediately to the County Medical Officer of Health, County Hall, Beverley. Any known relationship to a member or senior officer of the Council must be disclosed and canvassing will be deemed a disqualification. T. Stephenson, Clerk of the Council, County Hall, Beverley. June 25, 1952.

COUNTY Borough of Carlisle. Appointment of ASSISTANT DENTAL OFFICER. Applications are invited from registered Dental Surgeons for the above appointment. The salary will be in accordance with the recommendations of the Dental Whitley Council (Local Authorities), namely £800 rising by increments of £50 to £1,250 and placing on the scale will be according to experience. The duties will be mainly concerned with the inspection and treatment of school children, but will also include work under the Council's Maternity and Child Welfare Scheme. The officer appointed will work under the general direction of the Senior Dental Officer. The appointment will be permanent and superannuable and the successful candidate will be required to pass a medical examination. Applications, stating age, qualifications and experience, together with three names for reference purposes, should be lodged with the undersigned as soon as possible. James L. Rennie, School Medical Officer. Public Health Department, 22, Fisher Street, Carlisle.

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HUNTINGDONSHIRE County Council. Health Department. ASSISTANT DENTAL OFFICER. Applications are invited from Dental Surgeons for the above whole-time appointment. The duties of the post will include dental inspection and treatment of school children and dental work in connection with other County Health Services. The scale of remuneration will be £800 per annum rising by £50 to £1,250 per annum. The commencing salary will be fixed at a point on the scale according to experience. The successful candidate can either provide his own car for which he will receive travelling allowances on the County Council scale, or he may use a car provided by the County Council. Forms of application may be obtained from the County Medical Officer of Health, County Health Office, Huntingdon, to whom they should be returned as soon as possible. John Kelly, Clerk of the County Council. June 27, 1952.

GLAMORGAN County Council. Applications are invited from Dental Surgeons for appointments as ASSISTANT DENTAL OFFICERS, at a salary of £800 per annum rising by annual increments of £50 to £1,250 per annum. Duties will include the inspection and treatment of dental defects of school children, children under five years of age and nursing and expectant mothers. Married women will not be eligible for permanent appointment. Application forms for these appointments, together with particulars of conditions of service, can be obtained from the County Medical Officer, County Hall, Cardiff. D. J. Parry, Clerk of the County Council. Glamorgan County Hall, Cardiff. June 28, 1952.

CITY of Manchester Education Committee. ASSISTANT DENTAL OFFICERS. Applications invited from registered Dental Surgeons for appointments in the School Health Service. Dental Officers will be responsible for inspection and treatment of expectant and nursing mothers, pre-school and school children. Salary scale £800 x £50—£1,250. Allowance may be made for previous experience. Application form and particulars obtainable (stamped addressed foolscap envelope) from Chief Education Officer, Education Offices, Manchester, 3, to be returned by August 31, 1952, to the Town Clerk, Town Hall, Manchester. Philip B. Dingle, Town Clerk.

COUNCIL of the County of Aberdeen. Assistant Dental Officers. Applications are invited for two posts of ASSISTANT DENTAL OFFICER. Candidates must be duly registered Dentists. Salary £800 per annum rising by annual increments of £50 to £1,250 per annum. The appointments are superannuable and the successful candidates will require to pass a medical examination. Canvassing of members of the Council, directly or indirectly, in connection with the appointments, shall be a disqualification. The County Council will make housing accommodation available to the successful candidates within a reasonable time if required. Conditions relating to the appointments and forms of application may be obtained from the undersigned, with whom completed application forms should be lodged not later than Monday, August 11, 1952. Chas. Hornal, County Clerk. County Buildings, 22, Union Terrace, Aberdeen. June 30, 1952.

LANCASHIRE County Council. Registered Dental Surgeons required as ASSISTANT DENTAL OFFICERS in School Health and Maternity and Child Welfare Services. Salary £800 x £50—£1,250, according to experience. Travelling and subsistence allowances where applicable. Post superannuable. Application forms and further details from County Medical Officer of Health, East Cliff County Offices, Preston.

CITY of Portsmouth. Appointment of Assistant Dental Officer. Applications are invited from men or women Dental Surgeons for the whole-time appointment as ASSISTANT DENTAL OFFICER. Salary will be in accordance with the Dental Whitley Councils (Local Authorities) Salary Award. The commencing salary will be fixed according to experience. Forms of application may be obtained from the Chief Education Officer, Municipal Offices, 1 Western Parade, Portsmouth, to whom they should be returned not later than fourteen days after the appearance of this advertisement. Canvassing in any form will be a disqualification. V. Blanchard, Town Clerk.

ESSEX County Council—Walthamstow Health Area. Appointment of DENTAL TECHNICIAN. Applications are invited for the above post on the "Senior Technician" Grade at a salary in accordance with the recommendations of the Whitley Council for the Health Services (Professional and Technical Council B). Applicants must be competent in acrylic/metal work and orthodontic appliances. Subject to satisfactory medical examination, the selected candidate will be appointed to the established staff of the County Council. Letters of application stating age, qualifications and experience, accompanied by three non-returnable copies of recent testimonials must be submitted to the Walthamstow Employment Exchange, E.17, not later than July 31, 1952, quoting reference number M-1-H-11 on both the letter and covering envelope. A. T. W. Powell, Area Medical Officer.

DENTAL Attendants (women) required by London County Council for priority dental service, 114s. (21 years of age and over), rising to 144s. a week. Details on application form from Medical Officer of Health (PH.D.1.), County Hall, S.E.1. (745.)

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SEASIDE practice, South-East coast, nine-roomed house (leasehold) comprising surgery, waiting room and living accommodation, together with branch surgery, 10 miles out. Inclusive price £1,250. Will accept deposit of £450 on completion of transfer and balance by arrangement. Full particulars.—Box 155.

LIVERPOOL. Old-established dental practice for sale. Turnover over 1951-52 £4,500. 10-roomed house with surgery and workshop equipped. Freehold property. Owner willing to consider payment out of income. Price £2,750.—Box 157.

SURREY. Well-established practice for sale in congenial district within 25 miles of London. Average turnover (pre-N.H.S.) £1,795 p.a. Very attractive freehold residence with ample accommodation both private and professional. Disposal due to vendor's retirement.—Box 159.

CHESTER. Very central position in the city, 1 minute main shopping thoroughfare. Dental practice established 30 years. Good freehold town house with sensible accommodation, not too large, very manageable and in excellent order. Price to include freehold property, entire dental equipment £4,500. Would agree to sale excluding equipment if desired. Further particulars Swetenham, Whitehouse & Co., 5, St. Werburgh Street, Chester. Tel. 20422/3. Ref. 2231.

N.W. LANCS. Practice and house in busy industrial town. Established over 45 years. Excellent opportunity.—Box 161.

HIGH-CLASS, established, mainly private, practice (little National Health) in Sheffield, of lately deceased Dental Surgeon, for sale with full modern equipment. Surgery and premises on lease, situate in medical centre. Full details from W. A. Lambert & Co., Solicitors, 54, Bank Street, Sheffield.

WEST Riding town. Old-established practice for sale. 2 surgeries, ample living accommodation. Well situated. Death of practitioner being reason for disposal. Further details on application to —Box 163.

EAST Coast. Good class practice for sale. Established 26 years. Modern equipment. Freehold house in nice garden.—Box 167.

OXFORD. Freehold house and practice for sale. Corner site, main road. Surgery and workroom equipment, stock and other furnishings. Ample living accommodation. Central heated throughout. Owner retiring. Price £6,500 or near offer. Mortgage can be arranged.—Box 169.

YORKSHIRE. Qualified practice 45 years, busy market and light industries town, gross £8,000, expenses light, accounts audited. Good scope, living accommodation, owner retiring age. Open reasonable offer; principals only.—Box 171.

KENT. Practice established 40 years. Lock-up. Average takings £5,000. Owner going abroad.—Box 38.

DENTAL branch practice for sale, Leeds area, excellent house in beautiful decorative condition including ground floor surgery, four bedrooms first floor, garage, garden, inclusive price £3,000. Apply H. F. Hodson, Chartered Accountant, 3, Manor Street, Bradford, Yorks.

FOR Sale. Yorkshire coastal resort. Qualified practice, established 28 years, accounts audited throughout. Gross receipts last three years between £3,750 and £6,250; last year £4,000 on a 3-day week. Capable of further expansion. 8-roomed freehold house also for sale if purchaser wishes.—Box 18.

AS a going concern, in main road. For sale in South-East London area. Well-known, old-established, practice of 40 years' standing. Audited accounts yearly. Freehold house with room for garage within 15 minutes' walk; park, heath, and stations also 15 minutes' walk. Telephones, attached surgery to house. Owner is now retiring. Price, inclusive, £10,000 or nearest offer. Personal introduction for 3 months on behalf of purchaser.—Box 8.

BUSY West End dental practice and dwellinghouse in Edinburgh; branch practice in Fife. Apply Allan, Dawson, Simpson & Hampton, 4, Charlotte Square, Edinburgh.

AN old-established dental practice for sale in a coastal suburban town in Glamorgan. Centrally situated premises with fully modernised surgery stocked with the very latest equipment. Living accommodation over in perfect condition. Particulars from: Messrs. Stephenson & Alexander, Chartered Auctioneers, 5, High Street, Cardiff.

TO Let on lease, London, S.W. House, equipment and practice averaging £2,400 p.a. conducted in freehold semi-detached, three-bedroomed house. Garage, Garden. £275 p.a. or sell £3,350. —Box 173.

NUCLEUS of dental practice (not developed as owner practised elsewhere) in 12-roomed detached house. Modern surgery equipment. Main road, Kent suburb. £3,500.—Box 175.

Wanted

COUNTRY practice wanted South Scotland or North England area. Branch capable of expansion considered. With or without living accommodation.—Box 179.

SMALL qualified country practice wanted in South or West England. Near sea an advantage.—Box 181.

DENTAL Surgeon wishes to purchase established practice, country town Southern England. Full particulars and price in confidence to—Box 183.

DENTAL Surgeon, experienced, wishes to purchase established practice in coast town. Lock-up premises preferred. Partnership with view to early succession considered. Replies in confidence to—Box 187.

DENTAL Surgeon wishes to rent on lease established substantial practice in or near Central London. Must gross not less than £5-6,000.—Box 189.

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ASSISTANT required by young Dental Surgeon for busy practice outside Sheffield. Excellent scope and prospects for young man with initiative. Progressive practice steadily enlarging. Good equipment and staff. Give particulars.—Box 209.

ASSISTANT Dental Surgeon wanted, with a view to partnership if required, in Surrey suburban practice, 10 miles from London. To commence mid-August.—Box 211.

DENTAL Surgeon required, as assistant in good conservative practice—Lincolnshire. Excellent working conditions. Salary, plus commission. Apply stating hospital, date qualified and details of experience.—Box 213.

ASSISTANT required in medically qualified practice near London. Would suit young man wishing to gain experience of working with intravenous and general anæsthesia.—Box 215.

ASSISTANT required for well-established practice in Leicester. Write, with particulars of experience and salary required to —Box 217.

LEICESTER. Dental Surgeon requires assistant. Good prospects. —Box 221.

EXCELLENT opportunity for an efficient Dental Surgeon, preferably from overseas, as manager from October, for busy London practice near West End. Living accommodation might be available.—Box 223.

ORTHODONDIST requires assistant. Send all particulars including age and experience.—Box 225.

FULL time assistant required commencing August. First class suburban practice, Croydon area. Three in firm. Fully trained chairside assistance. Modern units. Congenial post. Partnership after one year for right type.—Box 1660.

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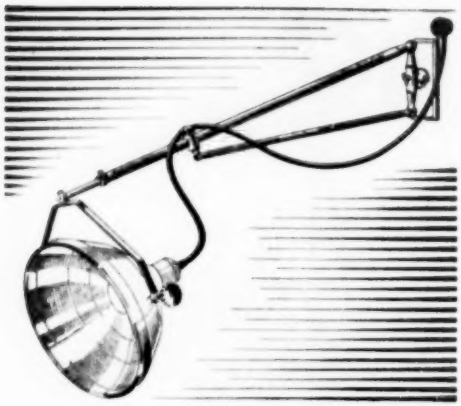
PART-TIME assistant required, congenial middle-class practice in S.E. London. Tuesdays, Thursdays and Saturdays (morning only) preferable but other days considered. Applicant must be experienced in all branches general practice.—Box 231.

LOCUM required 4 weeks commencing July 21, or part. Northampton.—Box 233.



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LOCUM required Leicester. Month of September. — Box 235.

Wanted

B.D.S. Durham, ex House Surgeon, due for release from R.A.F. August, requires assistantship in good class practice in Newcastle area. Please write—Box 237.

YOUNG B.D.S., married with family, requires permanent or temporary appointment, preferably with accommodation. Good conservative worker. Please write to—Box 239.

L.D.S. (Eng.), 29, with family, requires permanent situation, preferably view to partnership or succession in high class private practice. No N.H.S.—Box 241.

DENTAL Surgeon, ex-Guy's, seeks assistantship. Available August. Accommodation essential.—Box 243.

DENTIST requires position as assistant or could take full charge. Living accommodation would be necessary. North of England preferred.—Box 245.

DENTAL Surgeon, 2 years' experience, seeks assistantship or locums in Gloucestershire area.—Box 247.

EXPERIENCED Dental Surgeon, elderly, seeks employment—South preferred. Free September. Locum, assistant, capable manager. Offers/suggestions with particulars please to—Box 249.

L.D.S., Guy's 1939, single, requires locum and/or permanent assistantship in medium type practice. Salary secondary to congenial position. Give some requirements please to—Box 251.

L.D.S. (1950), single, demobbed R.A.F. late August, seeks locum or assistantship. Anywhere considered. When replying please indicate type of practice and proposed remuneration.—Box 253.

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OLD established and well known Instrument Manufacturers have opening for a Representative (London). Only first class man, with experience, need apply.—Box 255.

FIRST rate Dental Mechanic required for Manchester. Knowledge in bridgework essential and experience in porcelain jacket crowns preferred.—Box 257.

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MECHANIC, aged 45, with long experience in private practice work seeks situation in area South East of London.—Box 263.

DENTAL Technician requires situation, anywhere. Experienced all plastics, some experience cast gold. Just completed 5 years' apprenticeship. Reply N. Seage, "West Bay," Watchet, Somerset.

INDENTURED Dental Technician with six years' experience in plasties and vulcanite, etc., requires situation in Midlands district. Sound references.—Box 265.

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NEGOTIATIONS for practices and partnerships confidentially conducted. Particulars of available propositions upon application. Also register of Assistants, Locums, Secretaries and Mechanics. All inquiries receive prompt and individual attention.—Cottrell & Co., 15-17, Charlotte Street, London, W.1.

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RATHBONE lathe, 4 speeds, £16; Ash's single cylinder chair, dark blue, £30; Rathbone engine, A.C., £30 or offer. All perfect condition. "Cheswood," Totteridge Lane, N.20. HILLside 4897.

FOR disposal. 1 Watson Sunic Mark II X-Ray machine, 230 volts A.C. F. Wainwright, 36, Horsemarket, Barnard Castle, Co. Durham.

USED equipment: 1 used Biber 2-cylinder pump chair, finished black with brown leather upholstery, appearance good and mechanical condition perfect, £35; 1 used Coolidge type X-Ray tube in good condition, suitable for Ritter D.2 or Watson Mark I or II X-Ray machine, £15; 1 used metalix tube, complete with cover and fittings for Watson Mark III X-Ray machine, £20. Can be seen Birmingham.—Box 271.

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SIEMENS dental unit, full model, also "Heliosphere" X-ray apparatus and Schneider anæsthetic chair, all as new, for sale. Detailed list on request.—Box 1704.

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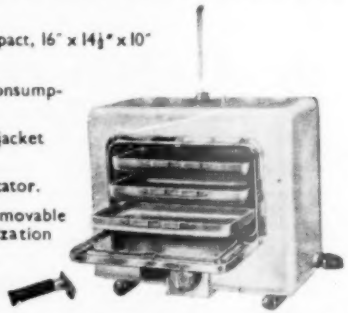

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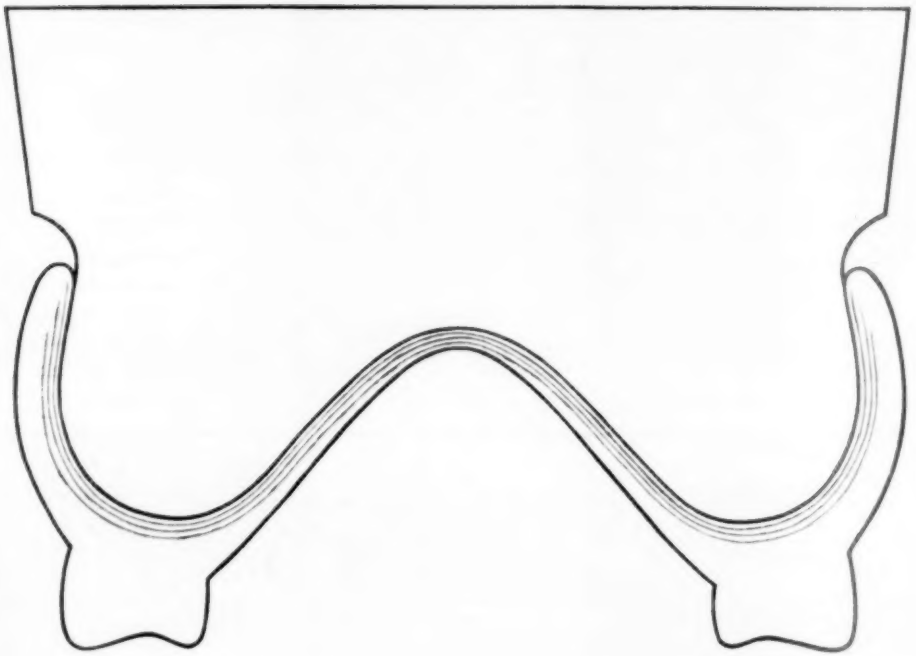

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Face first matter

BRITISH DENTAL JOURNAL

The Journal of the British Dental Association

VOL. XCIII JULY 15, 1952 No. 2

ORIGINAL COMMUNICATIONS

EPITHELIAL DOWNGROWTH: EFFECT OF METHYL TESTOSTERONE[1]

BY MARTIN A. RUSHTON, M.D., F.D.S.

WE have every reason to think that the rate of downgrowth of epithelium on the cementum of a tooth (which in most cases determines the depth of pockets and the extent of "recession" of the gums) is greatly affected by local factors—oral hygiene, bacterial plaques and calculus, excessive and insufficient forces applied to the tooth, etc. However, there can be little doubt in our minds that similar factors in the mouths of different persons and at different ages can produce very different results. We must suppose, therefore, that the results of local factors are modified by endogenous general factors which may be a part of the patient's inherited constitution or the result of acquired modifications of his health either transitory or permanent.

Supposing there are such factors, it is likely that they are very numerous: the process of maintaining health at the gum margin must necessarily include very many steps, and the interruption of any one step, unless compensated, will break the sequence needed for health. It is therefore undesirable now to enumerate the various general causes which we know will break the sequence—deficiencies of diet, poisons and the like. It may be more useful at this stage to consider in what ways they may act.

Below the neck of the tooth two processes are in competition: the apposition of new layers of cementum and the continued attachment of collagen fibres on the root on the one hand and the downgrowth of epithelium on the other. The two kinds of tissue cannot occupy the same place at the same time and the cementum forming tissue is there first. It seems likely, therefore, that the rate of downgrowth of the epithelium will be influenced by factors which affect the capacity of the individual to produce and maintain collagenous structures on the one hand, and by general factors influencing the health and proliferative capacity of the epithelium on the other. As to which is the more important, opinions are divided. Gottlieb (1920) considered that the vitality of the cementum was the most important factor, by which he meant the vitality of the cementoblasts and the continued apposition of new cementum; and Goldman (1944) has demonstrated that disappearance of inserted collagen fibres can be shown to precede the epithelial extension in some cases.

Those who consider that the more active agent is the epithelium, such as the Aisenbergs (1948) and Bernick *et al.* (1951), agree, of course, that the displacement or destruction of the inserted collagen fibres must take place but attribute this either to a proteolytic action or a pressure atrophy produced by the epithelium. The evidence in either direction is not yet substantial, and it certainly appears that the two views are not incompatible except in their extreme forms.

The epithelium may be concerned in another way also, in relation to local toxic or adverse mechanical influences; for if it be abnormally permeable or susceptible to ulceration from systemic causes this would facilitate the absorption of toxic material from the surface and might be expected to promote arrest of cementum apposition and destruction of the periodontal fibres. That general factors can affect the integrity of the epithelium has long been known as regards poisons like mercury, was established by the work of Mellanby and King (1934) on vitamin-A deficiency, and has since been shown in relation to many other substances.

One way of expressing in general terms the situation controlling the extension or otherwise of epithelial downgrowth along the cementum is to say that it depends on a balance between factors tending to maintain the apposition of cementum and continued attachment of collagen fibres, and factors tending to disturb those processes. Among the latter, aggressive properties

[1] Includes a Paper read to the British Society of Periodontology, March 1952.

of pathological epithelium may or may not have a place, but variable resistance of the existing connective tissues to any such aggression and to any other adverse influences may well be even more important. If that were so, it might be possible to show that influences which promote the formation of collagen and collagenous matrix retard the epithelial downgrowth and vice versa. Such effects may, however, only be obtained in cases where local detrimental causes are also present. In man such local causes are usually to be found.

Effects of Factors Influencing the Maintenance and Repair of Collagenous Structures

Among factors known to have an adverse influence on the formation or maintenance of collagenous structures are vitamin-C deficiency, protein starvation, adrenal gluco-corticoids, and age.

In vitamin-C deficiency the detrimental changes in the periodontal membrane are well known, although measurements of the rate of epithelial downgrowth compared with controls do not seem to have been undertaken: according to Glickman (1948) an additional local factor such as food impaction is necessary in guinea-pigs to cause accelerated epithelial downgrowth with pocket formation.

The effects of protein starvation on the rate of epithelial downgrowth do not seem to have been determined. Chawla and Glickman (1951) studied the effects of protein deprivation on the periodontal structures of the rat and showed that they resembled those found in other bone and connective tissues, and included degeneration of connective tissue of the gum and periodontal membrane, osteoporosis from reduction of matrix formation, and retarded apposition of cementum. The latter affected both acellular and cellular cementum, and particularly the cementoid layer which was often absent. No mention is made of any difference in the extent of the epithelial downgrowth, but as the duration of the experiment was only two months and the final age of the animals only 3 months it was unlikely that any changes would be seen.

It may seem unlikely that in certain countries such as this avitaminosis C or severe protein starvation are common important factors in man at present. We turn, therefore, to another group of factors which could affect the same mechanism.

The effects of the pituitary-adrenal combination on the formation of collagenous matrix have been the subject of much recent study. In brief, the adrenal gland produces several hormones, one group of which, the gluco-corticoids (cortisone or related steroids), has among other properties that of inhibiting the formation of collagenous matrix. This hormone may be produced in greater quantities than usual as a result of abnormality of the adrenal gland itself, but more often as the result of stimulation of that gland by a hormone of the anterior part of the pituitary gland usually referred to as ACTH. The production and release of ACTH in the body, while continuous throughout life, is variable in quantity: it may be greatly increased as a result of shock, operations, pregnancy and various other disturbances. The prolonged action of excessive gluco-corticoids leads to osteoporosis, since new collagenous matrix is not formed but resorption of bone continues at the usual rate.

On the other hand androgens, whether produced by the adrenals or gonads, have an opposite effect and promote the formation of collagenous matrix. Thus in Cushing's syndrome where there is an over-production of gluco-corticoids and osteoporosis the giving of testosterone is an effective treatment. It is thought that the effect of testosterone is to produce a depression or inhibition of ACTH secretion by the pituitary, perhaps through action on the hypothalamus.

It seems possible that these mechanisms may affect the rate of the epithelial downgrowth and be one of the important endogenous factors responsible for the variations in rate of downgrowth which occur between different individuals and at different periods in the life of one individual; but no evidence has so far been available. In an acute experiment on mice, however, Glickman *et al.* (1951) have shown that injections of cortisone acetate produced osteoporosis of the alveolar bone with marked reduction of osteoblastic activity, and reduction in number and degeneration of fibres of the periodontal membrane.

It is well known that old age is inimical to the formation of collagenous matrix and is also associated with advanced epithelial downgrowth. This downgrowth is, of course, the accumulation of increments acquired throughout life, but there is some reason to think that it is accelerated in old age as well. The diminished capacity for collagen and bone matrix formation in old age is doubtless due to many factors but in part, according to Albright (1947), it results from the diminished production of gonadal hormones, while that of adrenal gluco-corticoids continues at the same level. The osteoporosis of old age responds to treatment with œstrogens and testosterone.

Experimental

It appeared desirable to determine experimentally whether hormonal agents believed to affect the capacity of the individual to produce and maintain collagenous matrix would in fact affect the rate of epithelial downgrowth. While effects on bone matrix have been well studied, it is not known whether cementum matrix is affected in the same way: even in bone there has been reason to suppose that endosteal and periosteal bone may be affected differently.

It seemed that the golden hamster might be a suitable experimental animal. It had been shown to suffer severely from a form of parodontal disease when kept in captivity (Keyes, 1946; Mitchell, 1948; King and Gimson, 1948, 1949). The first step was to attempt to discover the usual rate of epithelial downgrowth on the various teeth in animals kept in certain standard conditions, and a rather constant pattern was shown (Rushton, 1951): this was considered to result from a combination of anatomical and pathological factors, the former predominating in the early months. It also appeared that by alteration of one environmental factor (addition of ground animal charcoal to the diet) a retardation of the rate of epithelial downgrowth could be obtained.

It has been shown by King and Gimson (1949) that in their experimental animals there was a relationship between the extent of parodontal disease and certain local factors. The author was unable to demonstrate a close relationship between the amount of supragingival bacterial plaque in his animals and the extent of the epithelial downgrowth, but has little doubt that local factors play an important part. It seemed possible, however, that under laboratory conditions the animals also suffered the effects of endogenous factors which increased the rate of downgrowth. If such factors existed, they would presumably operate either through affecting the capacity of the animal to produce and maintain collagenous matrix or through affecting the integrity of the epithelium. Androgens are believed to promote the former (probably by reducing the secretion of ACTH and hence the production of gluco-corticoids), and have been stated also to benefit the latter by increasing keratinisation and otherwise.

The author was not in possession of the requisite materials to determine directly whether the administration of gluco-corticoids would accelerate the epithelial downgrowth. Even if it did so, it might not prove very much since the injection of a number of substances which damaged the health of the animal might be expected to do the same. It was considered that a more important indication of the participation of the pituitary adrenal system in the process would be given should it prove that by the administration of androgens the rate of downgrowth could be retarded.

To test these possibilities golden hamsters bred from a stock originally purchased from the Medical Research Council were used. Ten males were taken at weaning and placed on the following diet in a wide-mesh wire cage: National flour 20 parts, corn starch 25 parts, cane sugar 20 parts, powdered full-cream milk 30 parts; and vitamin A 2,500 i.u., B_1 160 i.u., C 250 i.u., D 250 i.u. per 100 grammes diet, with supplements of greens, water, and hay bedding. An equal number of males from the same litters kept under the same conditions received the same diet with the addition of 8 mg. methyl testosterone per 100 grammes diet (experimental group). The experimental animals remained healthy throughout the experiment but their fur became stary after 4 months: 3 were killed at 7 months of age and the rest at 9 months. Of the control group 1 died, 3 were killed at 7 months of age and the rest at 9 months.

In the histological studies the heads were cut serially in coronal section and measurements were made on paraffin sections with an eyepiece micrometer. Points of measurement were at the anterior and posterior roots of each molar and midway between these, two readings being taken on sections not adjacent of the distance from the amelo-cemental junction to the deepest point of the epithelial downgrowth in contact with the cementum. The results were plotted on diagrams, as described in a previous paper (Rushton, 1951), in which the vertical axis represents the extent of the downgrowth in hundredths of a millimetre and the horizontal axis represents an arbitrary spacial arrangement. Serial sections of 6 animals from each group at 9 months of age and 1 pair at 7 months were examined.

Results

At 9 months the mean weight for the experimental animals was less than that of the controls (68 : 97 grammes) and the extent of epithelial downgrowth was less than that in the controls. Figs. 1 and 2 show diagrammatically the means for the various sites of measurement in 6 hamsters of each group at 9 months of age. It can be seen that at all sites the plot for the experimental animals lies below that for the controls, and at most points well below. The plots nevertheless lie approximately parallel as between the two groups, whether on the buccal side or the side nearer the mid-line in both jaws.

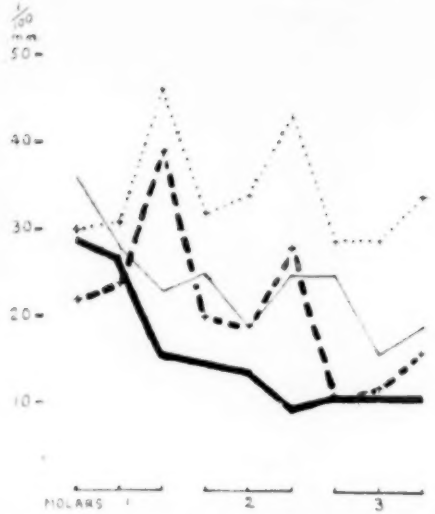

FIG. 1.—Mean extent of epithelial downgrowth in 6 experimental and 6 control hamsters at 9 months of age—Upper jaw. Heavy lines, experimental; thin lines, control. Continuous lines, buccal side; dotted lines, palatal side. Each point represents the mean of 24 measurements on 12 teeth.

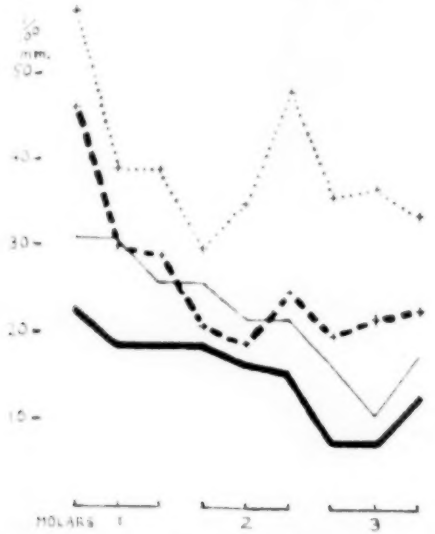

FIG. 2.—Lower jaw. Dotted lines, lingual side; heavy lines, experimental group.

The pair examined at 7 months of age showed similar differences but of less degree.

These findings indicate that the retarding influence on the rate of epithelial downgrowth has been on the whole very evenly distributed, affecting all sites in the same way, as one might expect from a systemic factor, and not affecting specifically the usual sites of fastest downgrowth as one might expect had a local cause been removed. Some idea of the extent of the retardation of the downgrowth can be obtained by comparing the means of all the measurements in the two groups at 9 months: they are, in 1/100ths millimetre, Control 31; Experimental 20, that is to say the experimental group has been retarded by $\frac{1}{3}$. If the figures for the various sectors, upper buccal, upper palatal, lower buccal, lower lingual, are taken separately the same relationship holds in each case. The means for all measurements in the pair at 7 months show the same ratio: Control 21; Experimental 14.

I am indebted to Mr. M. V. Stack, M.Sc., for the following statistical note:

In comparing the groups separately for each sector—upper buccal, upper palatal, lower buccal, lower lingual—subsidiary means of all readings for each molar of each animal were tabulated. In the four sectors the sets of means for the treated group were significantly lower than those in the control group, there being about 1 chance in 1,000 that this result had arisen by chance owing to the variation among animals and teeth. The coefficients of variation (standard deviations as percentages) among animals was 10 per cent, but as much as 25 per cent among teeth. Of the downgrowth measurements made ($2 \times 2 \times 2 \times 3 \times 3 \times 4 \times 6 = 1{,}728$ on the six pairs), 20 per cent of those for the treated group and 60 per cent of those in the control group exceeded one-quarter of a millimetre.

The final weights of the control group of animals varied from 70 to 120 grammes but there was no indication that the extremes were associated with extremes of downgrowth in the buccal sectors (which were thought less affected by local factors than the lingual and palatal sectors). This point is made because the final weights of the treated group varied between 56 and 80 grammes, the mean being about two-thirds of the control group mean.

Since Ziskin (1941) found that testosterone propionate increases the keratinisation of the gingival epithelium in monkeys and man, and since such an increase in keratinisation might indirectly affect the epithelial downgrowth if it occurred in hamsters, an examination of this point was made. No differences in degree of keratinisation or in thickness of the epithelial layers of the oral mucosa could be found in the two groups of hamsters.

It may be mentioned also that in 5 out of 6 pairs of animals at 9 months the thickness of the dentine of the lower incisors at the level of the anterior root of the 1st lower molar was much less in the treated animals than in the controls.

Whether this was due to decreased apposition or accelerated eruption was not determined.

Discussion

It has been demonstrated that, under the conditions of the experiment, the administration of methyl testosterone retards the epithelial downgrowth on the roots of the molar teeth of hamsters. This is in line with the view that one group of endogenous factors which affects the rate of downgrowth is that concerned with the capacity to form collagenous matrix. It does not, of course, prove that the pituitary adrenal mechanism is involved, though that is one explanation. In view of what is known of the effects of androgens it appears likely that the anterior part of the pituitary was in any case affected.

The smaller final size of the experimental group may well be attributed to depressed production of growth hormone, and it is reasonable to enquire whether reduced quantity of growth hormone may also have caused retarded epithelial downgrowth, perhaps as part of a retardation in the continued eruption of the teeth.

Unfortunately we have very little information about the effects of growth hormone on the continued eruption of teeth. Injection of pure growth hormone by Becks *et al.* (1948) did not accelerate the eruption of rats' incisors. In acromegaly the teeth indeed move faster in an occlusal direction, but perhaps rather with the bone than out of it. Hypophysectomy retards eruption, but here the defect is multiple for all the pituitary hormones have been removed together. In hypopituitarism of various types in man, delayed clinical eruption is common but again the defect is likely to be multiple so that the effects of particular hormones cannot be judged.

We have thus insufficient knowledge to say whether the retarded epithelial downgrowth can have been due to depressed growth hormone production in addition to or in preference to depression of other pituitary functions, though it has been mentioned that the rather wide variation in final weight in the control group was not reflected in a similar variation in the epithelial downgrowth.

It is interesting to compare the effects produced in the experiment with those seen in man in the adreno-genital syndrome where there is an excessive production of androgens. In man the latter is frequently associated with accelerated tooth eruption and rarely if ever the reverse, though these observations apply only to the primary clinical eruption of teeth and nothing is known of any effects upon the continued eruption which may take place thereafter. While accelerated bodily growth occurs in early childhood, growth becomes severely retarded before puberty so that the final height is short; and it may well be that the continued eruption of teeth is also retarded. In the hamsters the molar teeth are already clinically erupted at the age when the experiment began, and puberty is reached a few weeks later, so that there may be no discrepancy between the effects on these animals and what occurs in man.

I am indebted to Mr. J. E. Hutchinson for the long series of histological preparations used in this work.

Summary

(1) The proposal is discussed that there may be an inverse relationship between the rate of epithelial downgrowth over the cementum of teeth and the capacity of the individual to produce collagenous matrix.

(2) The administration of methyl testosterone mixed in the food of weanling golden hamsters and continued up to the age of 9 months produced considerable retardation of epithelial downgrowth compared with controls. The final weights of the treated animals were less than those of the controls.

(3) The retardation was manifested rather evenly on buccal and lingual or palatal aspects of both jaws, the general pattern of downgrowth remaining similar to that of the controls.

(4) No differences in the keratinisation or thickness of the oral epithelium could be detected between the two groups.

(5) It is suggested that the effects were caused through depression of one or more functions of the anterior party of the pituitary gland.

References

AISENBERG, M.D., and AISENBERG, A. D. (1948) *Oral Surg.*, **1**, 1047.
ALBRIGHT, F. (1947) *Ann. Int. Med.*, **27**, 861.
BECKS, H., *et al.* (1948) *Growth*, **12**, 55.
BERNICK, S., RUTHERFORD, R. L., and RABINOWITCH, B. Z. (1951) *Oral Surg.*, **4**, 1444.
CHAWLA, T. N., and GLICKMAN, I. (1951) *Oral Surg.*, **4**, 578.
GLICKMAN, I. (1948) *J. dent. Res.*, **27**, 9.
——, STONE, I. C., and CHAWLA, T. N. (1951) *J. dent. Res.*, **30**, 461.
GOLDMAN, H. M. (1944) *J. dent. Res.*, **23**, 177.
GOTTLIEB, B. (1920) *Z. Stomatol.*, **18**, 59.
KEYES, P. H. (1946) *J. dent. Res.*, **25**, 341.
KING, J. D., and GIMSON, A. P. (1948) *Brit. J. Nutr.*, **2**, 111.
——, —— (1949) *J. Path. Bact.*, **61**, 413.
MELLANBY, M., and KING, J. D. (1934) *Brit. dent. J.*, **56**, 538.
MITCHELL, D. F. (1948) *J. dent. Res.*, **27**, 330.
RUSHTON, M. A. (1951) *Brit. dent. J.*, **90**, 87.
ZISKIN, D. E. (1941) *J. dent. Res.*, **20**, 419.

THE DECIDUOUS TEETH OF THE ASIATIC ELEPHANT

By JAMES AITCHISON, B.Sc., F.D.S., H.D.D., D.D.O.

Comparative anatomists, until recently, had very little reliable knowledge of the age attained by elephants. The original "Jumbo" of the London Zoo was reported to have "carried generations of London children." "Princess Alice," an Indian elephant in an Australian Zoo, was claimed to have attained the age of 157 years and to be the identical "Alice" of the Regent's Park Zoo which had been bought by a Sydney circus. "Siam," a male elephant in Budapest Zoological Gardens, was reported to have been presented by Napoleon to the Emperor of Austria and to have reached the age of 150 years. Other claims of a similar nature were made for a number of famous elephants.

The late Major S. S. Flower (1947) in a final paper on the duration of life in mammals, published posthumously in 1947, showed these claims of elephant longevity to be ridiculous. The original "Jumbo" of the London Zoo was sold to New York and was killed in a railway accident at the approximate age of 24 years, according to Flower's enquiries. "Alice" of the London Zoo was traced to Barnum's Circus in which she was burned to death when the winter quarters of the circus caught fire in 1887; "Alice" was an African elephant and therefore could not be identified with "Princess Alice" which was an Indian elephant and which died in Australia in 1941. "Siam" was proved to be 40 years old at the time he was reported to have lived for 150 years. As a result of Major Flower's researches, it is now definitely established that the life span of both Asiatic and African elephants is three-score years and ten, similar to that of *Homo sapiens*. It seems remarkable that these views on the longevity of elephants should have been allowed to persist for so long when their real life span was common knowledge, even in the nineteenth century, among the European staffs of trading companies which employed elephants and their oozies, or riders, in the teak forests of Burma. Colonel Williams (1950), or "Elephant Bill," states that a young oozie would take charge of a young elephant and that the two would work together until the elephant completed its working years, generally around 55 years of age; man and elephant having the same expectation of life.

Comparative dental anatomists have been more thorough in their researches in the past on the dentition and tooth structure of elephants, notably upon the histological structure of the tusks. There is, however, still scope for work on the gross anatomy and on the histology of the developing molar teeth. The purpose of this short communication is to add a mite to our knowledge in both fields of the processes of development and calcification of elephant molars.

Expressed briefly, the sum of our knowledge of the developing molar teeth of elephants appears to be as follows:

The elephant molar has been defined as a series of vertical platelets of dentine, covered by enamel, and calcified into a single tooth by cementum. Marett Tims (1914) points out that the platelets are separate from each other "until a great part of their length is completed."

Bolk (1912, 1921, 1921, 1922), in expounding his Dimer Theory, claims to have seen evidence in fœtal elephants that the tooth-germ lies in a bucco-lingual plane across the antero-posterior line of the growing jaw and that, prior to calcification beginning, the tooth-germ rotates through ninety degrees so that the buccal monomere, or buccal platelet, develops into the anterior denticle or platelet.

Throughout the life of the elephant, six successional molar teeth develop on each side in the upper and lower jaws; the first three of these molars are regarded as deciduous teeth and the last three as permanent teeth.

Only one of these molars on each side of each jaw is in use at any given age, except during the period when each molar is being pushed forward and exfoliated by its successor, which comes into use behind and gradually moves in a mesial direction.

Each molar is larger than its predecessor and carries more platelets. The platelets for each tooth are remarkably constant in number and were enumerated by Flower and Lydekker (1891) as shown in Table I.

TABLE I

	1st tooth	*2nd*	*3rd*	*4th*	*5th*	*6th*
Asiatic elephant	4	8	12	12	16	24 or more
African elephant	3	6	7	7	8	10

The platelets on the molars of Asiatic elephants are narrow mesio-distally and are lozenge-shaped: those of the molars of African elephants are broader mesio-distally than those of Asiatic elephants, are diamond-shaped and, consequently, are less numerous. The unequal wear of enamel, dentine and cementum provides

a constantly roughened occlusal surface on the molars. Zeuner claims that the ancestors of Asiatic elephants had a dry, hard diet and developed numerous platelets on their molar teeth: and that the ancestors of African elephants had a more succulent diet and required fewer amelo-dentinal platelets within the structure of their molar teeth.

Wood Jones (1948), quoting the work of John Hunter and of Marston, has supplied an interesting reason for the evolution of the elephant's huge molar teeth. He draws attention to the fact that John Hunter (1773) defined teeth according to their function, referring to incisors as " procurers or dividers," to canines and premolars as " holders, retainers or killers " and to molars as " crackers or grinders." Wood Jones states that the ancestors of recent elephants were short, pig-like creatures; and that the elephant's neck and jaws did not elongate, like the neck of the giraffe, as the animal grew in stature; consequently the trunk became elongated to procure water and food. Marston (1946) showed that the growth and function of the trunk is responsible for the reduction in the number of the teeth. Bearing Hunter's definitions in mind, Marston states that the trunk has taken over the function of the missing incisors or " procurers " (except the tusks which are used for digging and, together with the trunk, for porterage); the animal uses its weight and its heavy feet as " holders or killers " and consequently does not require canines or premolars; the molars or " grinders " are the only teeth required, therefore, and these have become enlarged to such an extent that each molar occupies the area of an entire cheek dentition in other mammals.

Additional lubrication is supplied for these huge molars by the development of buccal salivary glands opposite the functioning teeth, similar in site to the buccal salivary glands of rats.

There are no published data upon the ages of the elephant when the individual molar teeth begin to develop. The only information upon this subject, which the present writer has been able to glean, is contained in a paper by Morrison-Scott (1947). In this paper he shows a skiagram of the mandible of a fœtal African elephant in which the 1st deciduous molar is calcified, the 2nd deciduous molar is extensively calcified but the 3rd deciduous molar does not show any signs of calcification, although its crypt is complete. The information contained in this skiagram can be summarised in the form of a table for the deciduous teeth of both African and Asiatic elephants (*vide* Table II), as there

TABLE II.—COMMENCEMENT OF CALCIFICATION IN THE DECIDUOUS MOLARS OF ELEPHANTS

Tooth	*Calcification begins*
1st molar	In fœtal life
2nd molar	In fœtal life
3rd molar	About birth

is no reason to suppose that there should be any material difference in the calcification ages in the two species. From additional information, to be given later in this paper, the reader can construct a table to include the ages at which calcification of the individual deciduous molars is completed.

It would appear at first thought to be easy to state the dates of eruption and shedding of elephant molars but the erupting tooth is so very far back in the mouth that it can be seen only with the greatest difficulty by keepers. Either the dates of both processes in the individual elephant are remarkably variable, which is improbable in the case of eruption dates especially, or the degree of reliability of observers or of keepers is remarkably variable, which is highly probable. Widdowson (1946) publishes the dates of eruption for Indian elephants as shown in Table III.

TABLE III.—DATES OF ERUPTION OF TEETH OF INDIAN ELEPHANT (WIDDOWSON)

Molar tooth	*Approximate eruption date*
1st tooth	3 months
2nd tooth	2 years
3rd tooth	5 years
4th tooth	9–10 years
5th tooth	20 years
6th tooth	30–40 years

If, as already assumed by many observers including the present writer, there is little difference between Asiatic and African elephants with regard to the dates at which teeth are erupted and shed, the foregoing figures relating to the deciduous teeth are inaccurate. Morrison-Scott (1947) states of the molars of the African elephant, " The animal starts life with two teeth showing in each side of each jaw." In a letter to the present writer, Dr. Morrison-Scott states " At birth the first molar of the African elephant and two or three of the anterior platelets of the second molar are erupted." In an earlier paper (1937) Morrison-Scott claims that the 2nd molar of the elephant " appears to be shed when the animal is about 3½ years old." Therefore, the 2nd molar appears to be in use for three and a half years and the 3rd molar must erupt some considerable time before the animal reaches 3½ years as it must be erupted to a considerable extent before its predecessor is shed. Morrison-Scott, writing of " Diksie," the young male African elephant at present in

Regent's Park Zoo, London, quotes Sharpe (1946) as stating that at 7 years of age the animal had the 3rd molar in full use and the 4th molar just showing.

From the foregoing somewhat scrappily presented details, a rough table of the eruption and shedding dates of the deciduous molars of the elephant can be compiled (*vide* Table IV).

TABLE IV.—AGES AT WHICH THE DECIDUOUS MOLARS OF ELEPHANTS ARE ERUPTED AND SHED

Molar tooth	*Eruption date*	*Shedding date*
1st	Before birth (Morrison-Scott, 1947)	probably in 1st year
2nd	Before birth (Morrison-Scott, 1947)	3½ years (Morrison-Scott, 1937)
3rd	Well before 3½ years (date when 2nd molar is shed)	After 7 years (Sharpe, 1946)
4th (or 1st permanent molar)	7 years (Sharpe, 1946)	

The Author's Specimen

The macerated mandible of an Asiatic elephant calf came into my possession recently (*see* fig. 1). The 2nd molars were fully erupted, the sockets of the 1st molars were not completely resorbed; the anterior four platelets of the 3rd molars were erupted and the second platelet from the front showed a degree of attrition. The animal must have been approximately 2 years of age, therefore, and the partially erupted 3rd molars at a suitable stage of development for studying the process of calcification. The lingual walls of the tooth crypts were cut away in order to remove the entire developing teeth for study. Hinges were affixed to the detached portions of bone so that the teeth could be returned to their crypts after observation and the lingual walls hinged back to their normal site.

A few observations might be made on the macroscopic structure of the mandibular canal and tooth crypt. The foramen of the canal is extremely large (*vide* fig. 1), being 55 mm. (2·15 in.) in its vertical diameter and 26 mm. in its horizontal diameter. Within the mandible the canal increases in size as it runs forward for a distance of 45 mm. to the posterior open wall of the crypt. Here the canal bifurcates into the large aperture into the crypt, roughly circular and 28 mm. in diameter; and into the flattened lower opening, or inferior dental canal proper, which runs forward below the bony crypt of the developing tooth, from which it is separated near its front by a very thin plate of bone. The inferior dental canal measures 5 mm. vertically and approximately 36 mm. horizontally and up round the sides of the crypt. From the size of the mandibular foramen and the opening into the crypt, an idea can be formed of the rich vascular supply required for the rapid calcification of these huge molar teeth.

The inferior bony wall of the tooth crypt at its posterior margin measures 15 mm. in thickness and gradually tapers round its buccal and lingual walls to its obviously thinner superior wall which was inaccessible for measurement, due to the curvature of the mandibular canal. The great thickness of the wall of this crypt for

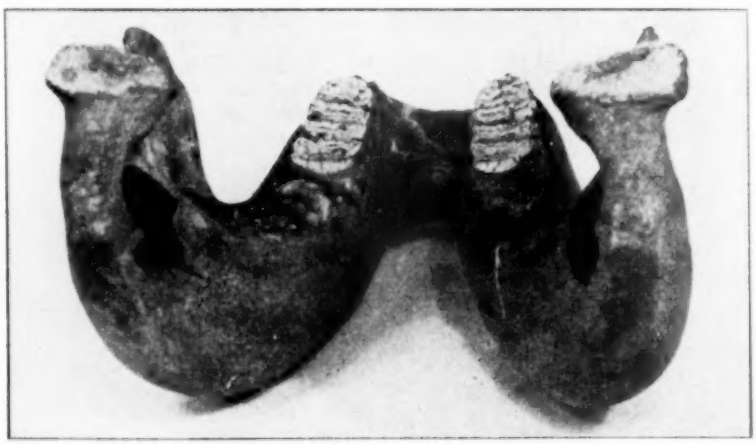

FIG. 1.—Macerated mandible of an Asiatic elephant calf of approximately 2 years of age. The 2nd deciduous molars and the anterior four platelets of the 3rd deciduous molars are erupted and in use. Note the extremely large size of the mandibular canal.

the 3rd deciduous molar is likely to be actually and proportionately much in excess of the walls of the crypts for the developing 1st and 2nd deciduous molars as the elephant is weaned before the 3rd deciduous molar is fully formed. The age of weaning, so far as the African elephant is concerned, is approximately 2 years (Game Department of Uganda Protectorate 1949). Consequently there is a greater need for protection of this tooth during development than is required for its predecessors. On the other hand the foramen of the mandibular canal must be proportionately large to supply the calcific material for the rapid development and calcification of the 1st and 2nd deciduous molars. The Uganda Game Department Report states of African elephants:

"... the general rule is for gestation and lactation to overlap—a pregnancy of about 22 months followed by parturition, lactation and, after something just over a year, another conception. The suckling calf, of course, will not be weaned for perhaps another year; and the new fœtus will be very small relative to the size of the mother until more than half-way through pregnancy."

In effect this would mean that lactation is occurring during the first fœtal year of all but the first calf and that growth and calcification of the fœtus become more rapid after the mother has weaned the previous calf. This concentration of calcification during the last ten months of fœtal life might provide another reason for the exceedingly large mandibular canal.

When the mandibular 3rd deciduous molar was removed from its crypt, the twelve platelets were fixed in an upright position, by pressing their developing bases into a sheet of dental wax, and photographed (fig. 2). The posterior platelets were closely packed together when within the tooth crypt and not spaced as widely as in the photograph. The last platelet consists of three parallel spicules of enamel and dentine, as in a fully calcified 3rd deciduous molar; the other platelets are complete laminæ.

Macroscopic examination of this developing tooth showed formation of dentine and enamel in each platelet to proceed uniformly from the occlusal surface towards the root but fusion of the platelets by cementum appeared to be less uniform. Study of fig. 2 shows that there is complete fusion by cementum of the 1st and 2nd platelets; incomplete fusion of the 2nd and 3rd platelets, where there is union near the occlusal surface for a vertical distance of 14 mm. (0·5 in.), an area of non-fusion and a small area of fusion measuring vertically 7 mm. at the developing end of the platelets. Fusion of the 3rd and 4th platelets follows a similar plan but the degree of fusion is less. Cementum covers the enamel on the eight posterior platelets but the stage of fusion has not been reached.

In order to investigate the nature of the cementum and to check whether or not acellular and cellular layers of cementum existed as described by Stones (1934) in human teeth,

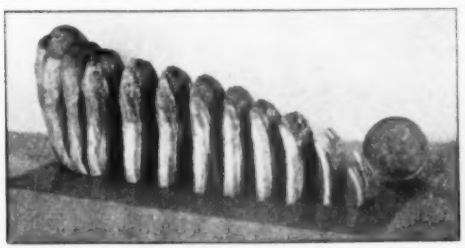

FIG. 2.—The 3rd deciduous molar of an Asiatic elephant calf of approximately 2 years of age showing the degree of calcification when only the first four platelets have erupted and attrition is beginning to show on the 2nd platelet of the series. The posterior platelets are separated more widely for photographic purposes than they are when in their natural position within the tooth crypt.

FIG. 3.—Transverse ground section of cementum and enamel (× 54) from the 4th anterior platelet of the 3rd deciduous molar of an Asiatic elephant calf showing the relative uniformity of the cementum. (The specimen had been in its macerated state for many years and was so friable that it was extremely difficult to prepare a ground section.) The striæ of Retzius within the enamel and the direction of the enamel rods should be noted.

several transverse microscopic sections were prepared by grinding; no structural difference appeared between the inner and outer layers of cementum (fig. 3). This is not surprising when it is recalled that elephant cementum has a cartilaginous origin, unlike human cementum.

Summary

The mandible and molar teeth of an Asiatic elephant, aged about 2 years, are described. Tables, showing the dates of commencement of calcification, eruption and shedding of the deciduous molars of elephants are compiled. Detailed measurements of the mandibular canal and crypt are supplied. A description and photograph of the developing 3rd deciduous molar give the macroscopic appearance of the tooth and a photomicrograph shows the uniformity in structure of the cementum from the enamel to the periphery.

Acknowledgments

Thanks are due to C. Kerr McNeil, Ph.D., L.D.S., for careful preparation of the mandible in order that the developing teeth could be removed and returned to their crypts without damaging the specimen; to Henry Noble, H.D.D., L.D.S., for the photographs and photomicrograph; to Dr. T. C. S. Morrison-Scott of the Natural History Section of the British Museum for clarifying some details on the erupted dentition of the elephant at birth; and to D. Bowles, Esq., Director of the Scottish Zoological Society for introducing the Annual Report of the Uganda Game Department to me.

Bibliography

AITCHISON, J. (1950) Dental Anatomy for Students. 2nd Edition. Staples, London.

BOLK, L. (1912) On the structures of the reptilian dentition and its relationship to the mammalian dentition, *Anat. Anzieg* **41**, 54. Supplement Berlin.

—— (1921) On the tooth glands in reptiles and their rudiments in mammals, *J. Anat. London*, **55**, 152.

—— (1921) Views on the development of the teeth, *Brit. dent. J.*, **42**, 1097.

—— (1922) On the relation between reptilian and mammalian teeth, *J. Anat. London*, **56**, 107.

FLOWER, S. S. (1947) Further notes on the duration of life in mammals—V. The alleged and actual ages to which elephants live, *Proc. Zool. Soc. London*, **117**, 680.

FLOWER, W. H., and LYDEKKER, R. (1891) Mammals, living and Extinct. Black, London.

Game Department of Uganda Protectorate. Annual Report for 1949, p. 15.

HUNTER, J. (1773) Historia Naturalis Dentum Humanorum. London.

JONES, F. WOOD (1948) Hallmarks of Mankind. Baillière, Tindall and Cox, London.

MARSTON, A. T. (1946) Dr. L. S. B. Leakey's discovery of fossil anthropoid mandible from the lower miocene of Kenya, *Brit. dent. J.*, **81**, 316.

MORRISON-SCOTT, T. C. S. (1947) A revision of our knowledge of African elephants' teeth, with notes on forest and "pigmy" elephants, *Proc. Zool. Soc. London*, **117**, 505.

—— (1937) Naturally shed elephant molars, *Proc. Linn. Soc. London*, 1936-37, **149**, 40-42.

SHARPE, H. B. (1946) Goodbye, "Diksie"! The story of a lovable elephant, *Country Life*, London, **99**, 526.

STONES, H. H. (1934) The permeability of cementum, *Brit. dent. J.*, **56**, 273.

TIMS, H. W. MARETT (1914) Tomes's Dental Anatomy. 7th Edition, p. 546. Churchill, London.

WIDDOWSON, T. W. (1946) Special or Dental Anatomy and Physiology and Dental Histology, Human and Comparative. 7th Edition, Vol. 2. Staples, London.

WILLIAMS, J. H. (1950) Elephant Bill. Rupert Hart Davis, London.

THE HISTORY OF DENTISTRY IN EDINBURGH[1]

By Professor A. C. W. HUTCHINSON, D.D.S., M.D.S., F.D.S., F.R.S.E.

The history of dentistry in Edinburgh forms an interesting study. As might be expected from its great tradition for the advancement of medical knowledge, Edinburgh has also played a prominent part in the evolution of dentistry.

It may come as a surprise to some to learn that not only did King James IV practise surgery, but he was also a patron of the dentist's art and, on several occasions, patients suffering from toothache submitted themselves to a trial of his skill. He did not conduct his practice in the normal way—of patient paying operator—but reversed the process, and the Lord High Treasurer's Accounts show that the King presented the patient with the same fee which he himself had to pay for a similar operation—apparently xiiii shillings—no doubt with the object of attracting victims.

Although the first recorded British book devoted entirely to dentistry "The Operator for the Teeth" was written by Charles Allen and published in York in 1685, nevertheless the subject was not entirely neglected in Edinburgh as I find that Alexander Monro (primus), who was Professor of Anatomy in the University, in his book "The Anatomy of the Human Bones" printed in Edinburgh in 1726, has a section on the structure of the teeth. Edinburgh, however, can claim to be the first in Britain to institute lectures in dental surgery, as James Rae, a prominent surgeon, who was Deacon or Master of the Incorporation of Surgeons of Edinburgh in 1764, gave a course of lectures on "The Diseases of the Teeth" in that year. He also gave lectures on surgery and was the first to institute clinical teaching in the Royal Infirmary as a means of augmenting his systematic lectures.

It is interesting to note that the first course of

[1] An Inaugural Lecture delivered in the University of Edinburgh on October 29, 1951.

lectures on the teeth in England was given in London at a later date by his son, William Rae, in 1782, on the suggestion of John Hunter and delivered in Hunter's house in Leicester Square.

In the eighteenth century, dental surgery was not only of a lower status than any other branch of the healing art but was even regarded as somewhat outside the pale of professional respect. There was reason for this. There were no teaching or licensing centres where persons, even if they wished it, could be either trained or obtain a legitimate diploma. Its ranks, consequently, were filled for the most part by itinerant tooth-drawers and by the village blacksmith, who practised dentistry as a side-line, because it was easy for him to make a set of instruments for his own use. Here and there were to be found legitimate and experienced practitioners, most of them surgeons practising dentistry, many of whose names will ever command respect as well as honoured historical reference. But they constituted the minority.

In view of the ill-repute attached to dentistry, it is perhaps surprising that John Rae, another son of James Rae, followed in his father's footsteps and paid special attention to diseases of the teeth. Although a prominent surgeon, he had an extensive dental practice. He was President of the Royal College of Surgeons of Edinburgh in 1804, and was the first to obtain the Fellowship of the College by examination in 1781.

During the latter half of the eighteenth century and the beginning of the nineteenth, there is little doubt that dental teaching was confined to occasional lectures and that organised instruction had not yet been undertaken in Edinburgh. Some information, however, is available that dental disease was beginning to be looked upon as important. Francis Home, the first professor of Materia Medica in the University, in his book, "Principia Medicinæ," printed in Edinburgh in 1762, devoted two chapters to Toothache and Dentition. In a student's notebook of lectures on Anatomy and Surgery given by Alexander Monro (secondus), another Professor of Anatomy, dated 1784, there are copious notes on the eruption of teeth in children, dental caries, filling of the teeth with lead and tin and on the importance of scaling the teeth. A manuscript notebook of lectures given by Andrew Duncan (Senior), Professor of the Institute of Medicine, on the theory and practice of Physic, dated 1789, has a section on Dentition in Children.

In those early days the degree of M.D. was the initial qualification in medicine, and candidates were required to submit, as part of the final examination, a thesis, written in Latin. Five of the M.D. theses in the University, between 1778 and 1829, were devoted to the formation, structure and diseases of the teeth. The information contained in these theses shows without doubt that Edinburgh had already embarked on dental research.

The Nasmyths

Mention must now be made of Alexander and Robert Nasmyth who considerably advanced the cause of scientific dentistry. Alexander (trained by Robert) was the elder and his outstanding work "The Researches on the Development, Structure and Diseases of the Teeth" was published in 1839. His name is perpetuated in "Nasmyth's membrane," the enamel cuticle which he accurately described. It is doubtful if Alexander can be claimed as an Edinburgh man, as, although he received his early training under Robert, he soon removed to London where his research work was carried out.

Robert became a Fellow of the Royal College of Surgeons of Edinburgh in 1823, and, apart from being a skilled dentist, was also an accomplished surgeon, and assisted Liston, Syme, Ferguson and other eminent men of his day.

He was appointed surgeon-dentist (in Scotland) to their Majesties George IV, William IV and Queen Victoria, thus maintaining the same honourable position during the reign of three successive sovereigns. Professor Goodsir was originally apprenticed to Robert Nasmyth and each spoke of the other with respect and esteem. Robert Nasmyth was elected Vice-President of the Odontological Society of London in 1857. When the Edinburgh Dental Dispensary was established in 1860, he cordially supported the proposals of his younger colleague, Dr. John Smith, that such a charity should be started and he joined the staff of the dispensary.

John Goodsir

That great genius, John Goodsir, who was Professor of Anatomy in the University from 1846 to 1867 deserves more detailed reference.

Although it was always intended that he should take up medicine, financial stringency influenced his father to accept an offer by Mr. Robert Nasmyth to take John as a pupil without fees, under a five years' apprenticeship agreement. He was allowed to attend medical classes at the same time. After two years' experience of dentistry, he tired of the work and longed to be free, and, in the end, persuaded Mr. Nasmyth to cancel the agreement before the expiry of the legal term, in order that he might confine his attention to medicine.

His training in dentistry stood him in good

stead and much of that skill and delicate precision with which he carried out his dissections can be attributed to the training he received in the handling of tools in Nasmyth's workshop. While still a student he made plaster of Paris casts of his dissections and of pathological conditions, completing the latter at the bedside of the patients in the wards of the Royal Infirmary.

Though he had quitted the practice of dentistry, there is little doubt that it had an influence on the direction of Goodsir's studies in original research, for in 1838 he read a paper to the British Association "On the Origin and Development of the Pulps and Sacs of the Teeth," a work which, in its day, was acknowledged to be a classic. Other investigators, such as Hunter, Retzius and Nasmyth had contributed fresh facts relating to Odontology but not one of these men gave that attention to the embryonic condition of the teeth that Goodsir bestowed. And no one succeeded as he did in furnishing a consecutive and complete account of the whole process of dentition. In the following year, 1839, he read another paper to the British Association "On the Follicular Stage of Dentition in the Ruminants; with some remarks on that process in the other orders of mammalia."

No greater compliment could be paid to Goodsir than the fact that Rudolph Virchow in 1858 dedicated his masterly work on "Cellular Pathology" to Goodsir as a slight testimony of his deep regard and sincere admiration.

The Chair of Anatomy in the University has been occupied by many distinguished men, and since Goodsir's time the dental profession has owed much to the researches of Sir William Turner in comparative anatomy and more recently to those of Professor Brash. Professor Brash's work on the mechanism of the growth of the jaws has never been seriously challenged nor has it been surpassed. For his distinguished work in dental science Professor Brash was admitted an honorary member of the British Dental Association in 1946.

John Smith

Another notable figure of about the middle of the nineteenth century, was Dr. John Smith, to whom dentistry in Edinburgh owes so much. He was the son of an Edinburgh dentist. He graduated M.D. in 1847, at the University and was elected a Fellow of the Royal College of Surgeons of Edinburgh in 1861. Although he originally intended to practise medicine, he decided, on the death of his father, to take up dentistry as his life's work. He subsequently became Dental Surgeon to the Royal Infirmary of Edinburgh and Surgeon-Dentist to Her Majesty Queen Victoria. To him may be given the credit of founding the Edinburgh Dental Hospital and School. He was also instrumental in initiating the foundation of the Royal Edinburgh Hospital for Sick Children. He was President of the College at the time of the University's Tercentenary celebrations in 1883, and received the honorary degree of LL.D. from the University.

There are other reasons, however, why John Smith's name should be remembered. In May 1856 he introduced a special course of lectures at Surgeon's Hall on the "Physiology and Diseases of the Teeth." This was the first comprehensive course of lectures on dental surgery to be given in Scotland. In the following year, he was appointed surgeon-dentist to the Royal Public Dispensary where he supplemented his lectures by such clinical instruction as the practice of the Dispensary afforded.

He was not content with this. He felt that better methods were required—something more satisfactory in the way of a curriculum for those who desired a special certificate in dentistry, such as he hoped to induce the Royal College of Surgeons of Edinburgh to grant. He actually did make representation to the College in 1858, requesting that steps should be taken to institute a Diploma in Dental Surgery. He was no doubt influenced by the fact that the Medical Act of 1858 gave power to the Royal College of Surgeons of England to examine and grant Certificates of Fitness in Dental Surgery, and also by the fact that the English College was not long in availing itself of this privilege, and he did not wish Edinburgh to lag behind London.

Edinburgh Dental Dispensary

Smith's representation to the Royal College of Surgeons of Edinburgh was unfortunately not successful. He was determined, however, to continue with his main object of advancing the status of dentistry and he decided that the next step was to provide a place in which dental treatment could be given to necessitous patients free of charge and where dental students could be taught. He enlisted the co-operation of Dr. Robert Nasmyth, Dr. Orphoot and Dr. Imlach, and, as a result of their combined efforts, the Edinburgh Dental Dispensary was opened in Drummond Street, in January 1860. It soon, however, removed to Cockburn Street.

Imlach was President of the Royal College of Surgeons in 1879 and was thus the fourth surgeon practising dentistry to occupy that position. His friendship with Sir James Y. Simpson may account for the fact that he was one of the first

dentists, if not the first, to use chloroform as an anæsthetic for dental operations.

As no qualification was as yet legally required of dentists, it is perhaps not surprising that at first few students enrolled in the dispensary; even the number of patients attending was not large, only 260 being treated during the first year, 1860–61. As a result of this, the promoters of this young charity decided that some new arrangement for its management was necessary. There was accordingly appointed a committee of management consisting of such eminent men as the Presidents of the Royal Colleges, Professor Goodsir, Professor Christison, Professor Sir James Y. Simpson, Professor Spence and others. From then onwards the Dispensary continued to flourish and more and more apprentices were attracted to it for instruction.

Round about the 'seventies, agitation was becoming stronger and stronger against the evils caused by irregular dental practitioners, whose numbers had increased alarmingly. It was realised that legislation on similar lines to that of the Medical Acts was required. In the end, English dentists led by James Smith Turner and John Tomes formed the Dental Reform Committee in 1876. In Scotland, on October 6, 1877, a conference of Scottish dentists appointed a committee, to be called the Scottish Dental Education Committee, with the following terms of reference "to confer with the staff of the Edinburgh Dental Dispensary as to the expediency of extending that institution to meet the requirements of an L.D.S. qualification and secondly to memorialise the Royal College of Surgeons of Edinburgh as to that body obtaining powers to grant a dental diploma."

Dr. John Smith was elected Convener of the committee with Mr. Bowman MacLeod as Secretary and Treasurer—a fortunate selection, since no abler or more energetic officials could have been found.

The Edinburgh School

As a result of the efforts of the Dental Reform Committee in England, a Dental Bill was presented to Parliament which in due course became the Dentists Act of 1878.

The Scottish Dental Education Committee at once presented a memorial to the Royal College of Surgeons of Edinburgh asking the College to institute a diploma in dental surgery, adjust a curriculum and arrange examinations, as provided for under the Act. This the College agreed to do in October 1878, though not without some dissentients, whose objections were largely overcome through the influence of Dr. John Smith.

The Committee also turned its attention to the provision of a dental school in which facilities for a complete dental curriculum might be given. The Dental Dispensary was inadequate for this purpose, but the Directors were willing to work with the Committee in endeavouring to provide a hospital available as a teaching school.

Premises were eventually obtained at 18, Brown Square (now 30, Chambers Street), in the joint names of the Edinburgh Dental Dispensary and the Scottish Dental Education Committee at a rent of £100 per annum. A Board of Managers drawn from these two bodies was appointed and the members of the Scottish Committee guaranteed the Board against any pecuniary loss.

And so came into being the Edinburgh Dental Hospital and School in November 1878, though not under that name. The institution retained the name of the Edinburgh Dental Dispensary until 1880.

Like almost all dental hospitals and schools in this country, the Edinburgh Dental Hospital and School owed its beginning to the generosity of a few members of the dental profession who not only provided funds but also gave of their time to teach students.

Lord Rosebery consented to be the first President of the new institution and the Vice-Presidents were the Lord Provost of Edinburgh, Sir Alexander Grant, the Principal of the University, and Lord Shand. The Directors included many notable men of the day, representing the Church, the Law, Medicine, Art, Dentistry and Commerce.

The first dean of the Dental School was Mr. Bowman MacLeod.

The Hospital and School made rapid progress and, during the next fifteen years, moved from time to time to more commodious premises until in 1894 it returned again to Chambers Street, this time to number 31, where it has since remained.

It is interesting to note that in 1892 the first woman student was admitted to the Dental School. She later became the first woman to qualify in dentistry in Great Britain. There is hardly any need for me to tell you her name. Dr. Lilian Lindsay has been an honoured member of the dental profession for many years. She married Robert Lindsay, one of the lecturers in the Dental School, who later became the first whole-time secretary of the British Dental Association and did much to further the interests of the Association and of the profession. Dr. Lilian Lindsay is Honorary Librarian of the Association and is probably the greatest living authority on the history of dentistry in Great Britain. Many honours have been bestowed on

her. In 1946, when the Annual Meeting of the British Dental Association was held in Edinburgh, she was elected President, and the University, to commemorate the occasion, conferred on her the degree of LL.D. Dr. Lindsay has also had the honour of receiving the honorary Higher Dental Diploma of the Royal College of Surgeons of Edinburgh. In the same year she was created *C.B.E.*

The value of Bowman MacLeod's constant and enthusiastic work in the interests of the Hospital and School cannot be over-estimated. He gave freely of his time and ability to improve the institution over which he presided as Dean. He was President of the British Dental Association in 1895 and in his Inaugural Address, it is remarkable that, at that early date, he stressed the importance of establishing Chairs in dental surgery in the universities.

Bowman MacLeod died in September 1899 and in October of the same year, my distinguished predecessor, Dr. William Guy, was appointed to the vacant deanship, a post which he held until his resignation in 1933.

He originally practised medicine as an assistant in Cumberland but, after seven years, he apparently tired of general practice and when Dr. John Smith, who later became his father-in-law, offered to take him into his dental practice in Edinburgh, he agreed although it necessitated two years of hard and unremunerative work before he could obtain a qualification in dentistry.

He became a student of the Edinburgh Dental Hospital and School, obtained the L.D.S. diploma in 1892, and in the same year completed the examination for the Fellowship of the Royal College of Surgeons of Edinburgh.

During the first World War, Guy was appointed Officer-in-Charge of the special centre for the treatment of injuries of the face and jaws at the Second Scottish General Hospital.

It was mainly due to his efforts that the Royal College of Surgeons of Edinburgh instituted their Higher Dental Diploma in 1918. This was undoubtedly a progressive step, as, up to that time, there was no higher dental qualification available for dentists who did not hold a university degree. It was a fitting tribute that, in 1946, he received the Honorary Higher Dental Diploma, on the same occasion as Dr. Lindsay, and when the College instituted the Fellowship in Dental Surgery, in 1949, he was made an honorary Fellow. He was also an honorary Fellow in Dental Surgery of The Royal College of Surgeons of England.

Guy's activities were not confined to Edinburgh. Soon after qualifying in dentistry, he began to take an interest in the British Dental Association and was President in 1914.

It was largely due to his efforts that, after a long struggle, the Dentists Act of 1878 was amended by the passing of the Dentists Act of 1921, which, among other things, precluded unqualified dental practice.

As a result of the 1921 Act, the Dental Board came into being, and Guy was one of the original members, serving on the Board until 1929.

He also took an interest in the affairs of the International Dental Federation and, when the Congress was held in Philadelphia in 1926, the University of Pennsylvania conferred on him the degree of LL.D.

He died in 1950, in his 91st year, after a life dedicated to the well-being of his profession and to the Edinburgh Dental Hospital and School.

The passing of the Dentists Act, 1921, brought with it the establishment of the Dental Board of the United Kingdom. From then onwards dental education was to receive a fresh impetus, as the Board was empowered, among other duties, to make grants towards the appointment of whole-time teachers in the dental schools and to contribute towards the cost of building extensions. Previously, the teaching side of dentistry in schools had been crippled by the associated hospitals which had to be maintained for the most part by student fees, as voluntary subscriptions were few and far between.

The administrative Committee of the Dental Hospital and School were not slow to take advantage of this new assistance. Plans were prepared for increasing existing accommodation with the result that on July 13, 1927, a new extension was formally opened by Sir Francis Dyke Acland, Chairman of the Dental Board.

It would be invidious on my part to make special reference to any individual member of the late Board of Governors or of the honorary staff, as I should be doing an injustice to the others, many of whom had been connected with the Hospital and School for over thirty years, and, in some cases, for over fifty years.

To be a member of the Board, or of the honorary staff, was regarded as an opportunity for service—a gift of time and skill, as no reward was attached to the position—and I cannot speak too highly of the friendly spirit and co-operation which prevailed, and of the help given by the Board's officials.

Time does not allow me to go into details of the progress made from 1927 until the introduction of the National Health Service Acts in 1948. Many improvements were, however, carried out in teaching and equipment.

In 1934, the Governors, with the assistance of

the Dental Board, were able to appoint the first whole-time dean and teacher of Clinical Dental Surgery. It is interesting to note that today there are 21 full-time posts on the establishment of the Hospital and School.

There were, however, two *major* problems in the minds of the Governors. The first was to demolish the old parts of the Hospital and School, situated behind the extension of 1927, and to erect a new building in their place. The second was to improve still further the standard of teaching. To this end, negotiations were entered into with the University, so that the Dental School might become an integral part of the University and degrees in dental surgery be instituted. These schemes had to be postponed on the outbreak of war in 1939.

Throughout the difficult war period, the University was unfailingly sympathetic and helpful to the Governors. Immediately before the war, temporary alterations had been carried out in preparation for the building programme and lecture rooms had to be used for other purposes. Not only was lecture room accommodation made available in the Medical School but courses of instruction were also provided for students taking the L.D.S. diploma of the Royal College of Surgeons of Edinburgh, although at that time the University had no responsibility for dental teaching.

These facts should be recorded: for without the assistance of the University, it would have been almost impossible to carry on the teaching of dental students.

When hostilities ceased, negotiations were resumed with the University and in July 1948, when the National Health Service Acts came into force, the School was transferred to the University and the Hospital to the Secretary of State for Scotland. The course for the degree of B.D.S., however, was not instituted until October 1949.

At one time, it appeared likely that the rebuilding scheme would be held up owing to priority difficulties but largely through the efforts of Sir Sydney Smith, who was acting Principal of the University at the time, these were overcome and building operations have been proceeding for the past three years. It is anticipated that they will be completed by the summer of 1953 and we hope to have a hospital and school of which Edinburgh may well be proud.

Looking back over the years and to the events that have happened since James Rae in 1764 gave the first lectures on dental surgery, in Great Britain, it seems correct to say that dentistry has not sought to cast itself free from, or to sever all connexions with, medicine. It has achieved co-education and has maintained the closest scientific and academic co-operation but it has, at the same time, sought for administrative independence. The extent to which this policy has succeeded is to be seen in the cordial relations which exist between dentistry and medicine both in the medical schools where dental students are taught and in the Royal College of Surgeons of Edinburgh and the Royal College of Surgeons of England where Fellowships in dental surgery have recently been established.

Administrative independence has still to come but the dental profession has the blessing of its foster parent, the General Medical Council, and a General Dental Council is likely soon to be an accomplished fact.

Twenty-five years ago, only one university in the United Kingdom could boast of a professor of dental surgery. Today, every university in this country with a dental school has at least one Chair in dental surgery and some have more.

These developments did not happen accidentally. Eminent men in the dental profession laboured to improve the teaching in the schools and to extend the bounds of dental science and the profession made great strides in the last decade or two. But the greatest task of all—to substitute prevention for repair—lies ahead.

It is no longer sufficient that the dental student shall have developed a degree of technical efficiency in the practical procedures of dentistry; these are, and will continue to be, essential, but changes must be made in his training to enable him to cope with the insistent problems of a dental health service.

The attention of the student should be focused upon the application of preventive measures which seek to control dental disease. As a foundation he should be instructed in developmental factors, and make a careful study of nutrition, with particular emphasis on the minerals, vitamins and other factors which are important for the correct development of the teeth, and their supporting tissues.

Preventive dentistry should exercise its influence in the antenatal clinics and especially in the child welfare clinics. In the latter, much useful work could be done to control irregularities in dentition and to prevent early loss of the temporary teeth.

The scope and applications of possible measures of prevention and treatment, and the recorded efficiency of these measures as applied to large numbers of individuals under varying conditions and over long periods of time, are matters which also require careful investigation.

The University of Edinburgh was one of the

first in this country to institute a lectureship in preventive and social dentistry and two years ago, as a preliminary step, the holder of the lectureship was sent to study at the Forsyth Dental Institute, Boston, in order to obtain first-hand information of the progress already made in America.

The University has also recently instituted a lectureship in parodontal diseases and a new course in biochemistry for dental students is being developed with particular attention to the requirements of dental science.

As the complete curriculum for the degree in dental surgery gradually comes into being no doubt the other departments concerned will make a critical study of their respective problems.

The true aim of dentistry, in its service to the community, must be the prevention of dental disease. In the past it has been obliged to focus its attention upon repair rather than upon prevention. Now, at long last, it would appear that opportunities are coming into being which will speed up the development of the preventive aspects of its services and lead to the greater advancement of knowledge, wider comprehension of the causes of dental disease and greater control over the disease processes themselves.

In the University, these opportunities have been recognised and seized, and the developments to which I have made reference must surely indicate that in its approach to the problems that surround dentistry and which, for the sake of the people, must be solved, the planning that has so far proceeded has been sound.

This is a matter which only time will decide. Those of us of the existing generation have planned and designed; it will be for those of the oncoming generations, by their own exertions, to show whether or not that which we did was good.

ACKNOWLEDGMENTS

I wish to acknowledge my indebtedness to Dr. Lilian Lindsay, Honorary Librarian of the British Dental Association; to Dr. J. Menzies Campbell; to Mr. C. P. Finlayson, Keeper of Manuscripts, University of Edinburgh; to Dr. Taylor, Department of Anatomy, University of Edinburgh; to Mr. David Thomson, Clerk of the Royal College of Surgeons of Edinburgh, for their assistance in checking dates and in providing me with information without which it would have been almost impossible for me to compile this paper.

SHORT COMMUNICATION

A CASE OF IDIOPATHIC APICAL ROOT RESORPTION

BY S. NEVIES, L.D.S.LEEDS

DURING routine treatment of the patient, a male aged 32, the $\lfloor\overline{7}$, being extremely loose, was extracted.

The extracted tooth was found to have its three roots almost completely resorbed (fig. 1). A radio-

FIG. 1.—Photograph of $\lfloor\overline{7}$, mesial aspect.

graph of the region taken after its extraction confirmed the absence of root fragments, and showed that the original root sockets were filled with new bone.

The patient, whose remaining dentition is now

$$\begin{array}{r} 5\ 321 \rfloor 1234 \\ 7\ 54321 \rfloor 12345\ 7' \end{array}$$

volunteered the information that when his other molar teeth had been extracted, the roots had all been in a similar resorbed condition.

Radiographic examination of the remaining teeth revealed apical resorption of the maxillary central and lateral incisors, the resorption being even and resulting in levelling of the apical surface. The resorbed areas have been replaced with new bone (figs. 2 and 3).

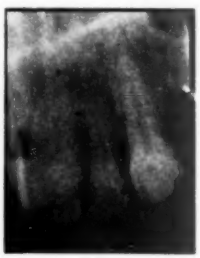

FIG. 2.—Apical resorption of $\lfloor 21$ with deposition of new bone in resorbed area.

FIG. 3.—Apical resorption of 12 | with deposition of new bone.

The mandibular incisors appear normal (fig. 4).

FIG. 4.—The lower incisors.

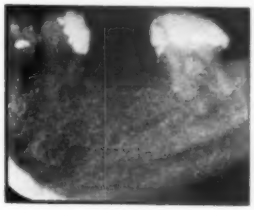

FIG. 5.—Uneven resorption of distal surface of | 5 and some shortening of the roots of | 7.

Fig. 5 shows uneven resorption of the distal surface of the root of | 5 and also some shortening of the anterior and posterior roots of | 7, the latter tooth is now rather loose.

Clinically, there had been no symptoms until the root resorption had progressed to a degree resulting in the tooth becoming very loose.

There has never been any systemic disturbance in the lifetime of the patient and no orthodontic treatment has ever been carried out.

I wish to express my thanks to Mr. S. Harris for the photographs.

EVERYDAY PROCEDURES IN DENTISTRY

PROCESSING OF DENTAL RADIOGRAPHS

BY HENRY MANDIWALL, M.B., B.S., L.D.S., F.R.P.S.

THE processing of dental films should be carried out with the same exactitude as the technique of correct exposure for the radiographs. Once this processing is organised and the technique mastered it can be so simple and standardised that it becomes second nature to turn out first-class correctly processed radiographs. When the film is subjected to X-rays, the silver salts of the emulsion are affected in such a manner that those which are exposed to the rays are capable of being converted into black metallic silver, through the action of a chemical solution called the developer. The silver salts that are unexposed can be removed by additional chemical treatment called fixing, and therefore, X-ray processing represents the various steps developing, rinsing, fixing, washing and drying, which bring about these chemical changes. There are two reasons why a standardised time-temperature development or procedure is important: firstly, the chemical reactions need to take place within a limited carefully observed temperature and time range; secondly, it provides a definite check on exposure time. It is economical, in every way, to buy ready-made standard developers and fixers as recommended by the makers of the films as this will save a lot of worry and trouble in mixing up solutions from a variety of chemicals which have to be stored in bulk to make it a cheap proposition.

Most of the developers mention a standardised time-temperature method, namely, five minutes when the temperature of the freshly and properly prepared solution is 65° F. If the processing factors are correct and the resulting radiograph lacks density, under-exposure is indicated; if the radiograph is too dense, over-exposure has taken place. The first condition can be corrected by increasing the exposure time approximately 50 per cent and the second by reducing the exposure time by the same percentage.

If one uses the dental radiograph to any extent, a separate room should be devoted to processing. The first requirement of such a room is that it must be absolutely light-tight; the processing equipment should be so arranged that it is quite a simple matter to employ the finest technique to the best advantage.

The illumination to be used in the processing room should be photographically safe, that is, it should not be so powerful as to fog the X-ray films when they are exposed to the light. Once

again the makers of dental films give the necessary advice in selecting these safe-lights.

Processing solutions should be mixed in recommended strengths and it is most important that the developers should always be made up in the same strength. The processing is simpler if the tank method is used throughout all the operations. The tanks, as supplied by various makers, will contain the developer, fixer and the washing water, and at fixed times, as again recommended by the makers, the films on the hangers are changed from the developer to the washing water and then put in the fixer, and finally washed and dried in accordance with the directions given in the instruction sheets sent by the makers with their chemicals. Temperature control is again very important, all the solutions should be kept at a temperature of between 65° F. and 70° F. It is very easy to fix a thermostatically controlled heating arrangement so that the big tank of water in which the three small tanks are kept, can be controlled at an even temperature throughout the year.

Exact time-temperature control is most essential and guess-work should not be tolerated. By following the makers instructions, a very satisfactory result indeed can be obtained. After the various stages of processing are complete, namely, developing, rinsing, fixing, washing and drying—the radiographs may be of different densities. If a constant technique in processing is maintained, it is quite an easy matter, as said before, to alter the exposure time so as to get the best final result.

Over-exposed Films

Nothing will take the place of a normal exposure and a correct processing technique. If, however, in spite of all the care which has been taken the radiograph does not turn out to be of the required standard, there are various processes that can be employed to improve the result. If a little too much exposure was given or the film was over-developed and the radiograph comes out dense, it is better to re-take the film; this, however, is not always possible and a method of reduction must be employed. This is accomplished by an agent known as a reducer which removes some of the silver from the film. In order to eliminate the necessity of preparing a reducer, ready-made reducers can be purchased. But if the operator wishes to prepare his own reducer, the following formula is recommended:

Solution A:	Potassium ferricyanide ...	75 grammes
	Water, to make	1,000 c.c.
Solution B:	Sodium thiosulphate (hypo crystal)	240 grammes
	Water, to make	1,000 c.c.

These solutions must not be mixed until ready for use. Then, take 1 part of solution A, 4 parts of solution B, and add water, 27 parts. The film to be reduced is lowered into the mixed solution in a glass beaker, and examined from time to time. To obtain an even reduction the film must be washed to remove all traces of fixer before being placed in the reducing solution. If the film has been dried, it should be allowed to soak in water for half an hour. Before examining the films, always rinse in water to prevent streaking. When the desired reduction has been reached, the film is removed from the reducing solution and washed in running water for twenty minutes. If for any particular reason only part of the film is to be reduced, wrap some cotton on an applicator and dip this into the solution and gently rub the area until the desired reduction is reached. Care must be taken not to streak the adjoining parts of the film. After reduction, the film must be washed in running water for at least twenty minutes.

Over-developed Films

For over-developed radiographs use the following reducer:

Water	1,000 c.c.
Ammonium persulphate	60 grammes
Sulphuric acid (concentrated)	8 c.c.

For use, take 1 part of stock solution and 2 parts of water. When reduction is complete, immerse the film in an acid fixing bath for five minutes and then wash for twenty minutes in running water.

Intensifying Solutions

It may be necessary to intensify a film which is too thin—due to faulty technique. It is strongly recommended that another film be made in such cases. If this is not possible, an intensifying solution should be used. The disadvantage of an intensifying solution lies in the fact that it may change the colour of the film, and in addition a considerable amount of time is needed in preparation. Ready-made intensifying solutions can be purchased from any photographic dealer. The following formula is recommended for those wishing to make their own solutions:

Stock Solution:	
Potassium bichromate	90 grammes
Hydrochloric acid (concentrated) ...	64 c.c.
Water, to make	1,000 c.c.

For use take 1 part of stock solution to 10 parts of water. This solution will bleach the image. Bleaching should be thorough. Wash until the yellow stain is removed (immersing the bleached and rinsed film in a 5 per cent solution of sodium carbonate for a few moments quickens this stage) and then re-develop in artificial light or diffused daylight. Wash thoroughly and dry. If greater density is required the operation may be repeated. The degree of intensification can be controlled by varying the time of re-development.

Faults in Technique

Let us now see how various faults in processing can be recognised and avoided.

A thin radiographic image may be due to under-exposure or under-development. If the fault is under-exposure, insufficient radiation produces a thin image, but the area of the film not occupied by the image is fairly dark. Under-developed films, are distinguished by their lack of rich black, which becomes particularly apparent in the area of the film not occupied by the image. Very dense radiographs are usually due to over-development, over-exposure or fog. In over-exposed films all parts of the image are proportionately dark, thus if held up to strong light an over-exposed film will assume an almost normal appearance. In the over-developed film, the density increases and the whites turn greyish with fog. Slight over-developing is not serious and may be preferred by some. Accidental over-development usually results from failure to compensate sufficiently for the increased activity of a warm developing bath. If the film is fogged it appears dark over all, and in this case, the contrast will be reduced and parts of the image darker. It is difficult to say that the film is fogged by just examining the radiograph. There are various causes of fogging: old or outdated films, light leaks in the dark room, hot developer, unsafe lighting, and stray radiation. All these causes can be systematically eliminated and prevented. If streaks are found on a radiograph, they may be due to turning on a white light in the dark room before the film has been fixed sufficiently to render it insensitive to light. These usually occur in the lighter areas of the film. If small white spots appear, they are usually due to dirt or dust, which has adhered to the emulsion of the film. White spots in rows are usually due to air bubbles, a processing defect which can always be avoided by agitating the film for a few seconds after lowering it into the developing solution. If the surface of a film becomes blistered or has a crinkled uneven appearance, it means that one of three things has happened:

(1) The temperature of the processing solutions was too high,

(2) The difference between the temperature of one processing bath and another was too great, or

(3) The fixing bath was too acid.

If the image gradually fades or turns yellow, it is usually due to improper fixing of the film and inadequate washing. Radiographs that are dull or flat in appearance, but which have about the right overall density, usually show incorrect exposure followed by incorrect development. If, for no apparent reason, there is a general lack of contrast in the radiograph it is better to make a fresh developing bath and carefully readjust the exposure technique.

All these faults can very easily be avoided and it should be the ambition of every radiographer to turn out the best possible radiograph. The processing technique is so simple, that if it is adhered to strictly, mistakes should not occur.

Practical Note

LINING PASTE IMPRESSION TECHNIQUE FOR PARTIAL DENTURES

By VERONICA M. HEATH, M.A., L.D.S.Eng.

In the construction of partial dentures it must be admitted that, despite their undoubted usefulness in general practice, the hydrocolloid and alginate impression materials fall short of the ideal inasmuch as compression of the soft tissues cannot be effected to any appreciable extent. This failing is particularly apparent in the case of free-ended saddle cases where the denture is to be partly tooth-borne and partly tissue-borne or in cases where so many of the natural teeth are missing that the principles of retention relating to full denture construction are applicable. Saddle compression can be achieved by the use of sectional compound impressions, but in a busy practice, under National Health Service conditions, this method of impression taking cannot be adopted as a standard procedure in all except perhaps the simplest small partial denture cases because:

(*a*) It is necessary to construct special sectional metal trays.

(*b*) The taking of the impression itself, except in highly skilled hands, involves quite an amount of chairside time.

(*c*) It is usually necessary for the patient to attend at a subsequent visit for the taking of the bite.

(*d*) In cases of slight mobility of the teeth due to periodontal disease there is always the possibility of the teeth being slightly displaced buccally during the taking of the palatal and lingual portions of the impression.

In the technique about to be described there is none of the above disadvantages, while most of the advantages to be gained by the taking of sectional impressions are preserved; furthermore no special trays are required and the technique itself is well within the capacity of the average general practitioner.

At the patient's first visit impressions are taken either in a good quality elastic compound or in "Zelex" and bite blocks are constructed using a form of baseplate which can be slightly heated to obtain a closer adaptation in the patient's mouth.

At the second visit the lining paste impression and the bite are taken, the procedure being as follows:

(i) The upper bite block is tried in the mouth and shortened where it impinges on any of the muscle attachments; it is then warmed for closer adaptation, particularly along the posterior border. Where there are free-ended saddles, the tuberosity area of the bite block is built up with green compo tracing sticks, one side at a time and the patient instructed to protrude the mandible to ensure that the addition of tracing stick is free of the ascending ramus of the mandible in all positions. If necessary, further additions of tracing stick are made until it is clear that the height can be increased no further, care being taken to remove any compo which may have escaped on to the tuberosity itself. The " post-dam " area, i.e. the area where the hard and soft palates join, is then located by palpation with the finger and marked with the point of an indelible pencil dipped in alcohol. (It will be found that this area varies considerably both in width and position in different patients.) Tracing stick is then added to the posterior edge of the bite block till this whole area is covered, by which time there should be considerable resistance to the removal of the bite block from the mouth.

(ii) The lower bite block is tried in and warmed and trimmed free of the muscle attachments. Green tracing stick is added round the heels of the bite block in free-ended saddle cases, one side at a time, the patient being instructed (*a*) to close the jaws together to ensure freedom from the masseter muscle on the buccal aspect and (*b*) to lift the tongue and pass it from side to side into each cheek, also to swallow, these movements being made to ensure that the added tracing stick is free of the tongue in all positions and of the superior constrictor muscle during deglutition.

(iii) The bite is taken in the usual way, the bite blocks being carefully separated from one another after rinsing in cold water.

(iv) The upper bite block is dried, thinly covered with lining paste, inserted into the mouth and the patient is instructed to protrude the mandible, the lower bite block is then also inserted and the patient requested to close the mouth with as much pressure as possible. The patient's cheeks are loosely massaged to roll over and muscle trim the edges of the impression. After the impression has been in the mouth for about one minute under biting pressure, the patient should rinse the mouth vigorously with cold water for a further minute. The lower bite block is then removed, and after any paste that may have penetrated between or on to the occlusal surfaces of the standing teeth has been removed with a Le Cron carver or similar instrument, the upper impression is removed from the mouth. It will be found that the post-dam area is clearly marked on the impression.

(v) The lower bite block is now coated with a thin layer of lining paste and inserted, the patient being instructed to carry out the same tongue exercises as those carried out on the addition of green tracing stick. The upper impression is re-inserted and the patient should close the mouth as hard as possible while the cheeks are massaged as before to roll over and muscle-trim the edges. After a minute or so the patient should rinse vigorously and then *drink* several sips of water for a final muscle trimming of the posterior lingual edge of the impression so that it will be free of the superior pharyngeal constrictor muscle while swallowing. Both impressions are removed from the mouth and examined. If these are satisfactory they are reinserted and the patient instructed to close hard to ensure that the impressions have gone quite home.

(vi) If a face-bow record is required, it is taken at this stage with wax wafers for the centric and protrusive bites, the impressions remaining in situ throughout.

(vii) Impressions of the occlusal and labial and buccal surfaces of the teeth are now taken in " Zelex " over the bite blocks and the composite impressions thus obtained are cast in artificial stone. After the models have set, the Zelex is removed, and the models are mounted on the articulator before removal of the bite blocks.

This whole process takes about forty minutes for two impressions or twenty-five minutes for one impression, including the taking of the bite. It will be found that partial dentures made by this method are very satisfactory and require very little easing, fully justifying the extra time involved over the taking of the impressions.

Orthodontic Note

Caries Control: Its Influence and Effect on Malocclusion

THE percentage of malocclusion caused by early loss of tooth material may fall between 18 per cent and 35 per cent depending upon who made the classification. Cases fall into groups: (1) early loss of 6-year molars. (2) premature loss of deciduous molars and (3) loss of arch length due to caries and breaking down of contact points of deciduous and first permanent molars. Union Grove, Wisconsin had 1·0 ppm fluorides and Madison 0·05 ppm; the latter showed three malocclusions to Union Grove's one; 57 extracted first permanent molars to Union Grove's none, and seven time as many extracted deciduous teeth in the 6 to 8 years old group as in Union Grove. The malposition of teeth is mild in fluoride areas compared with those seen in Madison. If it is possible by fluoridation of water to reduce the incidence of caries by 50 per cent the incidence of malposed teeth might be reduced by 20 per cent to 30 per cent.—PLATE, W. R. (1949) *Amer. J. Orthodont.*, **35,** 790.

BRITISH DENTAL JOURNAL

JULY 15, 1952

THE COMING WEEK

THE XIth International Dental Congress in London, which is to be opened on Saturday of this week, will be an historic event in the annals of British dentistry. Ever since the ill-fated Congress of 1914 was perforce abandoned after the opening day, British dentists have waited patiently for another opportunity to entertain their colleagues from all parts of the world at an International Congress. Now, ten years after the date originally planned, that wish is to be fulfilled. The plans for the Congress have been steadily matured during a period when the state of world affairs boded ill for the success of any such gathering, and the Committee of Organisation deserve, and will no doubt receive, the congratulations and thanks of the profession for the success with which their steady optimism has been rewarded.

The stage is now set for the first full International Dental Congress to be held in this country and the British Dental Association extends a welcome to members of the profession from forty-five countries. These will include many of the world's most distinguished dentists, and it is doubtful whether such a representative gathering of the élite of the profession has ever before been brought together for mutual consultation. They will have much to impart and equally, we may be sure, they will be eager to see and appreciate what has been, and is being, done in these islands to advance dental and allied sciences. Many of those who are visiting Great Britain for the first time will, too, no doubt be anxious to learn at first hand from their colleagues here of the impact of the National Health Service on dental practice and the well-being of the profession. This is, indeed, a topic which is of unfailing interest to visitors to this country, and it can safely be predicted that it will form the basis of many of those informal conversations between groups and individuals which are so valuable an adjunct to any professional meeting. A comparison of the ratio of members attending the Annual Meetings of the British Dental Association with those which obtain in other countries, in particular in the Commonwealth and the United States of America, shows that British dentists are not nearly so appreciative of the advantages of associating with their fellows at such meetings or conventions as are their overseas colleagues, who pay special registration fees in order to be present at them. It is, nevertheless, disappointing that the number of dentists from the home countries who have enrolled as members of the Congress is small in relation to the total number, whereas a reasonable expectation would have been that the host country would have been represented by a substantial majority of members. There is, fortunately, still time for those who have not already enrolled as members to do so and so avail themselves of opportunities which are not likely to recur in the professional lifetime of many British dentists. It is, for instance, not to be expected that such a wealth of demonstrations by experts from all over the world, as are to be presented at the Congress, will again be available at any foreseeable date in future, or that the average dentist will ever again have a chance of discussing the latest developments in technique with so many leading practitioners of all nationalities in such favourable conditions as will be available to members of the Congress at the Royal Festival Hall during the coming week.

Two events which are being held in connection with the Congress and which are open to non-members deserve special mention. They are the Dental Health Exhibition and the Congress Ball at the Royal Albert Hall. The former will consist of a series of displays of dental health education material from many countries, together with material illustrating the methods adopted in different parts of the world to inculcate the precepts of dental hygiene and to combat the ravages of dental disease. An exhibit which is likely to attract special attention, both from dentists and members of the lay public, is one which deals with methods of adding fluorides to drinking water. This has been prepared by the American Dental Association and will be on view for the first time. The Exhibition is to be opened at 2.30 p.m. on Saturday, July 19, by Miss Patricia Hornsby-Smith, Parliamentary Secretary to the Ministry of Health, and will be open from then until the close of the Congress. It should be of outstanding interest to all those dentists, doctors and laymen, who are concerned with the promotion of dental

health. It should, needless to say, make a special appeal to school dental officers who will, doubtless, be eager to show what is being done in this sphere in this country and to compare our methods with those adopted in other lands. This, again, is one of the opportunities provided by the Congress which is not likely to be repeated for many years to come.

The week will be crowded with social engagements of various kinds. The great events will be the Congress Ball at the Royal Albert Hall on Wednesday, July 23, and the Congress Dinner on Friday, July 25. The former is open to all members of the profession and their friends. A brilliant entertainment in its own right, it will afford British dentists an unrivalled opportunity of meeting their colleagues from overseas and members of their families, and of repaying in some small measure the hospitality which has been extended to members of the profession by their colleagues overseas at previous Congresses and on many other occasions. The dictates of pleasure and duty seldom coincide so emphatically as they do in respect of this, the crowning social function of the Congress.

NOTES AND COMMENTS

Change of Colour of Gas Cylinders

THE attention of dental practitioners is drawn to the important letter from the Secretary of the Medical Defence Union on page 49, which deals with changes which are to be made in the colours of gas cylinders. In the past there has been a considerable amount of confusion because cylinders of the same gas have been painted in different colours in this and other countries. Under the ægis of the British Standards Institution an agreement has been reached on an international basis under which a standardised system of colours for gas cylinders has been adopted. In accordance with this agreement cylinders containing nitrous oxide are in future to be painted French Blue instead of black as has hitherto been the practice in Great Britain. The change is to become effective from August 1 and it is important that dentists should co-operate with the suppliers in order to ensure that cylinders are repainted in the new colour at the earliest possible date. A dentist who has in his possession cylinders of nitrous oxide which are not likely to be used immediately after August 1 should communicate with his suppliers with a view to having them exchanged for cylinders painted the new colour.

Memorial of Dr. William Guy

THE attention of readers is directed to a letter which appears in this issue inviting subscriptions towards the foundation of a William Guy Memorial Lectureship. Dr. Guy's long association with Edinburgh and Edinburgh Dental Hospital and School make it fitting that the memory of his distinguished services to the profession should be perpetuated in a Lectureship in that city; there are, however, many members of the profession who, although they have no direct connection with Edinburgh, will desire to be associated with this memorial to one whose work on behalf of dentistry was not confined to one city nor even to one nation. Dr. Guy had earned an international reputation and it is appropriate that the first Guy Memorial Lecture is to be given by Dr. Chas. Nord, President of the International Dental Federation, who will speak on "Dr. William Guy—A National and International Leader of Dentistry." The lecture is to be given in the Hall of the Royal College of Surgeons of Edinburgh on Tuesday, July 29, at 5 p.m.

A History of Canadian Dentistry

THE June issue of *The Journal of the Canadian Dental Association* is almost wholly devoted to a history of the Association and of the profession in Canada. It is a fascinating record from which the future historian will be able to trace the gradual development of provincial and district dental associations and societies and the establishment of the Canadian Dental Association as the representative body of dentists throughout the Dominion. Dr. Don Gullett contributes a chapter on the history of the C.D.A. and other chapters deal with dental education in Canada, dental research, the Royal Canadian Dental Corps, in which the Association has always taken great interest, and the development of dental specialities. The history of the many voluntary dental organisations is dealt with in a series of short articles which are, in effect, a summary of the history of Canadian dentistry as it became organised throughout the ten provinces of the Dominion. These articles read in conjunction with the short biographies of the distinguished men who have been presidents of the C.D.A. will enable the British reader to appreciate how much has been accomplished during the fifty years of the lifetime of the Association concurrently with the growth of the profession to over five times the number of those in practice in 1902. The tale is one of which the profession in Canada has every

right to be proud. It demonstrates how much has been achieved by the efforts of men who devoted themselves unsparingly to promoting the best interests of their profession and to welding the units scattered over the wide extent of the Dominion into a strong representative body. All those concerned in the production of this historic volume, and in particular the editor-in-chief, Dr. M. H. Garvin, are to be congratulated on the results of their efforts. This History of Canadian Dentistry will in future years be as valuable a source book as is the Jubilee Book of the British Dental Association.

British Standards

AT the end of March 1952, there were no fewer than 1,800 British Standards current covering a very extensive range of industrial, professional and technological apparatus, materials and nomenclature. A complete annotated list is given in the 1952 British Standards Yearbook (British Standards Institution, 24, Victoria Street, S.W.1, price 7s. 6d.) together with lists of the personnel of the seventy-nine committees which draft the standards. The British Dental Association is represented on the Dental Industry Standards Committee by Mr. Parker Buchanan, Mr. R. Fairhurst, Mr. Warren Harvey, Professor E. B. Manley, Professor J. Osborne and Mr. W. Stewart Ross, and on the Surgical Instruments and Medical Appliances Industry Standards Committee by Mr. R. Sutton Taylor.

Fifty Years Ago

From the "Journal of the British Dental Association," July 15, 1902.

WE cannot refrain from commenting on a remark which has come under our notice in a paragraph in the *Court Circular* referring to the Conversazione in connection with the Royal Dental Hospital of London. There is a popular belief that a man has only to be a dentist to make a fortune, and we fear that the wider this idea extends the greater will be the number of disappointments experienced by young men who bind themselves down to an arduous and exacting occupation, under the mistaken impression that a dentist's work is easy and his income princely. "Not a few men," we read, "now take up dentistry in preference to ordinary medical practice, for as parents with large families may be interested to know, the pecuniary rewards are as a rule much greater. Many a doctor is languishing in a small country practice, who, if he had become a dentist, would be keeping his yacht and taking a grouse moor every year!"

LETTERS TO THE EDITOR

CHANGE OF COLOURS OF GAS CYLINDERS

SIR,—Your readers may be aware that for some years past the Medical Defence Union, the Association of Anæsthetists and the British Oxygen Company acting under the ægis of the British Standards Institution have sought to define measures to eliminate avoidable accidents arising from the administration of the wrong gas to a patient for anæsthetic purposes. After many conferences on the subject agreement has been reached, and, shortly, action will be taken to put into effect the conclusions of the interested parties. There still remains the possibility of introducing a non-interchangeable valve that would render it well nigh impracticable for an anæsthetic apparatus to be rigged in the wrong manner thereby permitting the delivery of the wrong gas. The application of that device awaits further conferences and agreements among the organisations intimately affected. For the present however the following steps are being taken with regard to the colour marking of gas cylinders and the following statement is submitted to apprise all concerned with the changes that are imminent:

(1) In the past manufacturers have followed a particular scheme in colouring the outside of cylinders containing medical gases to enable anæsthetists and others readily to identify the gaseous contents, or to select a cylinder containing the gas or mixture it is intended to use. The colours that have been applied to cylinders in this country hitherto conflict with those used for similar gases in other countries and as a result, certain serious errors and some fatal accidents have occurred. Anæsthetists have been confused by the use of different colour marking by manufacturers in countries overseas when their cylinders and ours have been intermixed in hospitals and other medical units at which practitioners of two or more nationalities are employed.

(2) As a step towards the removal of this danger a high measure of agreement has been reached on an international basis on the standardisation of colours, names and symbols of medical gas cylinders and this involves an alteration in the identifying colours of most of the cylinders at present in use in the United Kingdom.

(3) To accord with the new standard these alterations of colour will be affected by the suppliers who have devised a comprehensive scheme for the collection and repainting of cylinders in a short period of time.

(4) A special effort of co-operation between suppliers and users will be necessary to reduce to a minimum the time taken to effect a complete "change-over" and to recognise the risk arising from the possibility of a user having temporarily in possession cylinders of two different colours containing the same gas.

(5) To avoid confusion and danger cylinders containing one particular gas will be dealt with seriatim; the first batch of cylinders to be altered in their colouring will be those containing nitrous oxide all of which are at present painted black. They will be changed to French Blue. The repainting of the nitrous oxide cylinders will commence on August 1, 1952. Prompt information must be given to the supplier now and throughout the operation as soon as empty cylinders are ready for collection. If, however, any nitrous oxide cylinders held by a user are not likely to become empty in the immediate future the

supplier should be informed and arrangements made for these to be collected, credited and/or replaced.

(6) After the manufacturers have dealt with the repainting of cylinders containing nitrous oxide the repainting of cylinders containing other gases will begin. Hospitals will receive information and instructions from the Ministry of Health with regard to this matter and further particulars will be issued by the suppliers regarding the collection of cylinders containing other gases and when they are ready to deal with them.

(7) During the transitional stage and for a considerable time thereafter it will be necessary to identify the gas contained in any cylinder by reading the name of the gas or the chemical symbol appearing on the cylinder as only by that procedure can accidents be avoided that are due to dependence on colour alone.

(8) A new colour chart will be issued to hospitals and is now available to any who desire copies on application to the British Standards Institution, 24, Victoria Street, S.W.1.

(9) Hospital authorities are being invited to designate a responsible administrative officer in each hospital to take action on the following lines:

(*a*) A notice should be prepared in the following terms and prominently displayed in every part of the hospital where gas cylinders are handled or gas is used; personal copies should be handed by the administrative officer to every doctor, dentist, nurse and midwife engaged in the hospital, and to all porters and other persons who handle gas cylinders:

> "Starting on August 1, 1952, changes will take place in the colouring of medical gas cylinders; to identify the gas, reliance must be placed primarily on the name of the gas or the symbol stencilled on the cylinder and not on the colour of the cylinder."

This action should be taken shortly before the date indicated in the notice, and the administrative officer should obtain the signature of each person receiving a personal copy in token of having received, read and understood it.

(*b*) the administrative officer should be responsible for seeing that all new staff engaged (see (*a*) above) are similarly handed a notice and required to sign for it.

(*c*) the administrative officer should see that every medical gas cylinder arriving in the hospital, and every cylinder already in stock, has attached to it immediately a red tie-on tally bearing the words in heavy black type:

> **"DANGER. COLOURS ARE BEING CHANGED. READ THE LABEL AND CHECK THE SYMBOL AND NAME OF GAS."**

It will be the duty of the hospital authority to see that frequent inspections are made by the administrative officer to ensure that the tallies are in position on all cylinders used at the hospital.

(10) Any person about to use a medical gas must first satisfy himself on the identity of the gas (or gases) he selects to administer to a patient. A person using an anæsthetic machine should always verify the couplings of the apparatus before starting to use that machine. Safety of practice can be achieved only if everyone undertaking to administer a medical gas observes the following rules:

A Read the name of the gas or symbol on the cylinder.
B Check the coupling of the anæsthetic apparatus.
C Test the gas for identity at the delivery end.

Yours faithfully,

The Medical Defence Union,
Tavistock House South,
Tavistock Square,
London, W.C.1.

ROBERT FORBES,
Secretary.

THE WILLIAM GUY MEMORIAL LECTURESHIP

SIR,—As a tribute to the late Dr. William Guy, it has been resolved to commemorate the valuable services which he rendered to the progress of dental surgery by the foundation of a Lectureship associated with his name.

During his long and busy life of 90 years, Dr. Guy was one of the foremost figures in the dental profession. His fame was indeed world-wide, and he was beloved and respected by the many generations of students who came under the influence of his brilliant teaching, as well as by numerous colleagues, not only in dental surgery but in the wider fields of medicine and surgery. His skill in practice and in teaching was equalled by his outstanding success as an administrator. For thirty-four years he held the important office of Dean of the Edinburgh Dental Hospital, an institution which owes much to his wise leadership; and in a much wider field, throughout this country and even abroad, he promoted a high standard of professional conduct and of scientific attainment.

The dental profession owes a vast debt of gratitude to Dr. Guy, and it is only fitting that work such as his should receive permanent recognition. During his lifetime Dr. Guy was the recipient of many well-deserved honours. He was President of the British Dental Association, and Vice-President of the Fédération Dentaire Internationale. The University of Pennsylvania conferred upon him the degree of Doctor of Laws, and the Royal College of Surgeons of England elected him a Fellow in Dental Surgery, while the Royal College of Surgeons of Edinburgh honoured him, not only with their Honorary Fellowship in Dental Surgery, but also with the honorary Higher Dental Diploma.

Now that Dr. Guy is no longer with us, we feel that the proposed Lectureship will serve, not only as a memorial of a great and good man and of his work, but also as a means of continuing those services to his profession which he so ably initiated.

Subscriptions may be addressed to The Treasurer of the Royal College of Surgeons of Edinburgh, 18, Nicolson Street, Edinburgh 8.

Yours faithfully,

WALTER MERCER,
President, Royal College of Surgeons of Edinburgh.
A. C. W. HUTCHINSON,
Director of Dental Studies, Edinburgh Dental Hospital.
ROBERT WHYTE,
President, Odonto-Chirurgical Society of Scotland.
DUNCAN McGREGOR,
Chairman, Scottish Comm. British Dental Association.

18, *Nicolson Street,*
Edinburgh 8.

FLUORINE IN WATER SUPPLIES

SIR,—The fluoridation of water supplies for the reduction of dental caries arouses increasing interest and sooner or later the official British attitude must be declared. In the event of a favourable decision, it might be wise to try to anticipate the reaction of the public so that fluoride schemes may be initiated as smoothly as possible.

The reaction of a section of the American public supplies a precedent as to what we in Great Britain may expect.

This letter does not concern itself with members of the public who desire that the water supplies should be fluoridated, nor with that group who are content to entrust such matters to the officers whom they appoint, but merely reports on the pattern and intensity of the American anti-fluoridation campaign. We must not under-estimate its power; already much harm has been done; public clamour has forced fluoridation installations to close down, and the reduction of financial allocations has retarded development. Emotion has been whipped up until fluoridation has become equivalent to a political issue; indeed, the campaign may have some of its roots in politics, especially as this is the year of the Presidential election when political passions run high. An astute politician on the look-out for a campaign might find a heaven-sent opportunity in the fluoridation of municipal water.

It appears also that some journalists are happy to enter the campaign; little bulletins which describe the " wickedness " of fluoridation are selling well at 10 cents per copy. These diatribes would be amusing did they not disclose so much human frailty. One of them claims that fluoridation schemes are fostered by enemy agents so that in the event of war, the public could be poisoned by " One Turn of the Valve." What a pity that this imaginative author did not take time to do a little calculating so as to find how much fluoride is necessary to poison a city. Taking 450 parts per million of fluorine in water as the beginnings of lethal dosage, that is, the concentration at which vomiting begins, then for a city with a water consumption like Glasgow, about 400 tons per day of sodium fluoride would be required, or if sodium silico fluoride was used, then about 1,000 tons per day would be necessary. " One Turn of the Valve, forsooth."

Another allegation, as oft-repeated as the foregoing, claims that fluoridation is a plot of the neo-Marxists. Fluoridation, they say, causes deterioration of the frontal lobes of the brain thus rendering the masses compliant to the will of the " master class " who retain the full possession of their wits by drinking exclusively clear spring water imported in glass bottles! The subservient robots have suffered " chemical lobotomy "! I wonder what the good citizens of Maldon, South Shields and Slough think of this—their town waters have been naturally fluoridated.

This does not exhaust the list of people who have been making plots! The manufacturers of fluoridation plant have been at it too and so have the aluminium companies! The latter, it is asserted, have accumulated sodium fluoride as a by-product: hitherto unsaleable, they find that they can unload it in fluoridation programmes! It matters little that Sir James Crichton-Browne was advocating fluorine therapy in the '90s, long before aluminium came into popular household use.

Among the ranks of the anti-fluorine campaigners, an awkward type of fellow is to be found; he will challenge the proponent of fluoridation thus: " I assert that fluoridation can be the cause of . . ., now prove the contrary." The name of any suitable disease can be substituted for the dots in this gambit.

But the saddest feature of all is that many decent and intelligent people have taken up an attitude to fluoridation; perhaps some individual sensibility has responded to the bombardment of propaganda and a " chain reaction " has been set agoing. Some have managed to link up fluoridation with religion. Maybe the motive is suspicion founded on war hysteria, or a suspicion of politicians, of scientists, of officials, of big business; sometimes it appears to be just plain cussedness. One lady told me that she would emigrate if her domestic water was fluoridated; I had to warn her that she could not entirely " contract out " of fluoridation; it would be found in traces in practically everything she ate and drank, and that it was already in her own body.

These people should be given every consideration and sympathy. We must educate them to such a pitch that they will come to us and demand fluoridation of municipal water. It is a truism that, in any public reform, it is wrong to advance too far in front of public opinion.

In conclusion, may I express the opinion that soon the day will come when the dentist must be prepared to discuss fluorine therapy with the lay public and with his colleagues in kindred professions. In this sense, a situation could readily arise wherein the dentist might encounter a lay person who knew more about this dental subject than the dentist himself.

Glasgow Dental Hospital and School,
211, *Renfrew Street,*
Glasgow, C.3.

Yours faithfully,
J. CAMPBELL.

FLUORIDISATION OF WATER SUPPLIES

SIR,—Mr. David A. Finlayson, Chief Dental Officer, Dundee, reported last month on an investigation made in that city to test the value of the topical application of sodium fluoride in arresting the development of dental caries in newly erupted permanent teeth. " Results," he wrote, " show that the application (like the ingestion of fluorine in drinking water) only produced a postponement of caries. The use of a tooth-brush, night and morning, especially last thing at night, would make a great contribution towards dental health. I am convinced that even if fluorine, in either ingested or applied form, could make a permanent improvement (which has yet to be proved) it would be almost nullified by the lack of oral hygiene in removing the carbohydrate and sugar residue."

An experiment in U.S.A. reported in last month's " Americanism Bulletin," Faribault, Minnesota, confirms Mr. Finlayson's point of view. Quoting C. W. Freeman, D.D.S., Dean of the N.W.U. Dental School, the " Bulletin " reports him as saying: " Nearly three years ago the school launched one of the most extensive, costly and practical experiments in dental history. The results indicate that tooth decay can be reduced 50 to 60 per cent. by the simple process of brushing or rinsing the teeth right after eating."

What can you do by adding fluorine to city drinking water that you cannot do with a tooth-brush? Even those

who favour fluoridising water supplies only claim a 40 per cent reduction with fluorine added to reservoir content. Here is a 50 to 60 per cent reduction with only a tooth-brush. The many objections to fluoridisation I do not go into. The prevention of dental caries lies obviously along the lines of oral hygiene, not in the addition of chemicals to drinking water.

30, *Linden Avenue*, *Stirling*. Yours faithfully, J. MACFARLANE FORBES.

THE OLDEST DENTIST

SIR,—With reference your note on the oldest living dentist, Mr. Arthur King, now living at Ivorholme, Aldersey Road, Guildford, was born on November 7, 1861. While still a student at the Royal Dental Hospital, he was present, as a guest of his brother, Mr. Edward King, at the 3rd Annual Meeting of the British Dental Association held at Plymouth in 1883. He qualified in November 1883, joining the Association soon afterwards. He was President of the Southern Counties Branch in 1902–3, and was one of the first life members of the Association, being elected in October 1931.

Yours faithfully,

Dene Lodge, *9, London Road*, *Guildford*. POWIS CONWAY-JONES.

OLD MEMBERS OF THE ASSOCIATION

SIR,—I shall attain my 87th Birthday on August 5, 1952, all being well. I was apprenticed to dentistry in July, 1878, to Henry Planck, who was first Dean of the Dental Hospital, Manchester.

I have been a most regular attender at the Annual Meetings of the Association and hope to be present at Cardiff in September 1952. I attended at Cardiff twice previously: the first in 1907, President, J. C. Oliver—that was Bryan Wood's attendance for the first time at an Annual Meeting. My second attendance was when W. Kittow was President. I have attended four previous Meetings of the International Dental Congresses: the first at Berlin, 1909; the second at London, 1914; the third at Philadelphia, 1926; the fourth at Paris, 1931; and hope to attend the XIth International Dental Congress, London, 1952.

I was made a life member of the Association in 1946 and was a member of the North Midland Branch before the East Lancs. Branch was formed.

I retired from active practice when I attained my 80th year, but still attend the East Lancs. Branch meetings. I am certainly one of the oldest members of that Branch.

I enjoy good health, and enjoy attending all the meetings of the British Dental Association, and its East Lancs. and East Cheshire Branch.

11, *Woodlands Road*, *Cheetham Hill*, *Manchester*. Yours faithfully, A. T. SPAVEN.

THE "KEY" IN USE

SIR,—During a recent visit to Morocco, I spent some time in Marrakesh, the town with its famous Place Djemma El F'Na—an immense open market square and centre of extraordinary activities. There, pages from books on the History of Medicine come to life as one sees the fantastic surgical and medical treatments performed in the open alongside the various traders and entertainers.

Dental disease, which is much in evidence, is mostly treated by applications of various ointments and powders. A few "dentists" with displays of neatly arranged teeth spread out before them are always to be seen, but their activities seemed to be confined to dressings, or pieces of paper written with charms, applied to the affected tooth.

One afternoon, however, a large crowd collected around one of these tooth-drawers who was a Berber from the Atlas mountains and obviously a man of professional repute. Talking voluminously he did a brisk trade selling small cubes of a brown substance as a cure for toothache, to be applied to the offending tooth. Eventually, he produced an instrument similar to an English key with a removable claw, and I prepared to witness the horrors of old-fashioned dentistry. From one of his patients, who were now squatting before him, he extracted a lower molar so quickly that I suspected a trick, but the tooth was passed round for inspection. Without cleaning his instrument he tackled his next case—an upper central incisor root with remains of a crown. Applying the claw of the key lingually and with one swift movement buccally the tooth came out cleanly and in one piece.

Moving up close to his side I remained until sundown to watch this strange extraction session. The patients, who were all non-European male adults, showed no signs of apprehension or pain, so quick was the operation. An old tobacco tin passed round acted as spittoon. There was no water, and the claw of the instrument was occasionally wiped with a dirty piece of paper. As far as I could see all comers, except children, were accepted for extractions at a fee of 25 francs (about 6d.). A very large number of people came only to buy the toothache cure, a vast amount of which was sold at 10 francs a cube.

Altogether, on this and other occasions, I saw him extract about thirty teeth, mostly upper and lower molars and lower premolars, and nearly all in firm healthy gums. Some of the teeth were broken-down and difficult, but all were extracted whole and without fracture in one movement. In spite of the quackery and the appalling dirt the humiliating fact remains that I have rarely seen modern instruments and techniques used with such dexterity and simplicity.

114, *Chingford Mount Road*, *London, E.4*. Yours faithfully, JOHN O'C. DANIELS.

Reviews and Abstracts

OLD INSTRUMENTS USED FOR EXTRACTING TEETH. By Sir Frank Colyer, *K.B.E.*, LL.D., F.R.C.S. London: Staples Press Limited. 1952. Pp. 256. Price 42s.

Twelve years have elapsed since the promised publication of this book, and many who looked forward with eagerness to the happy event of publication became almost morose at the postponement. However, the delay due to the dangers of war and the post-war lack of plenty have had the happy effect of giving its author twelve

years in which to undertake further research, to enrich the already valuable contribution with new material and many extra illustrations. This is the first work on dental extraction instruments to gather the history from ancient to modern times into one story. The earliest reaction to toothache was evidently not to pluck out the offending member, but to placate it with charms and soothing applications, until some impatient sufferer could stand it no longer and either removed the tooth himself by striking it out or persuaded someone else to do it with an instrument shaped like a "hedge stake." Some bright observer of a blacksmith working with tongs may have been struck with the idea of the tongs as useful for the purpose and this tool was apparently the earliest to be used for extraction. After a few centuries a new instrument came upon the scene in the shape of the pelican, probably suggested by seeing a cooper wrenching off or forcing on the hoops of a barrel—at least this is so held by Guy de Chauliac from whom the author quotes. This opens the much debated question as to the origin of many surgical and dental instruments which appear to derive their shape, and the name given to the instruments support this, from the beaks, snouts and feet of birds and animals. In the first rare edition of Paré, from which the illustrations in this book are taken, one of the pelicans is called a "dauiet," a word which may throw light on this confused subject. "Davier" is a "daviet" as well as an instrument of extraction or a hook and curiously enough is also described as a tool used by coopers. The fascinating story continues from the pelican to the key, for the earliest door keys were hooks. It may also explain the expression the "Key of Garangeot," it being generally agreed that Garangeot never mentions "key" for extracting teeth. The reason for the expression "Key of Garangeot" lies in a reference in a small brochure written by Lecluse in 1755 who states (page 37) that he had used the "Pelican que M. Garangeot a forme' sur la *Clef Anglaise*". The translation of the phrase "la Clef Anglaise" is a wrench or spanner, and Garangeot introduced a central screw into the ordinary spanner to allow the beaks to be approximated or withdrawn from one another.

The author has entered with interesting and minute detail into the origin of the key and shows how an early door key with its claw-like wards could be converted for use as an extraction instrument and mentions occasions when a door key was actually so used. He, wisely, leaves the reader to draw his own conclusions.

A chapter on elevators makes a good transition between that on the pelican and that on the key and shows how combinations could be effected between these instruments. Roots of teeth and broken teeth have provided a time-long problem for even the most skilled of operators; devices for their removal have exercised the ingenuity of the operators, it seems that it was not until the nineteenth century that the idea of the screw presented itself and took the form of a kind of corkscrew until Hullihen combined it with the blades of the forceps.

The forceps, the most ancient of all instruments of extraction, were eclipsed, or at least pushed into the background, when the pelican appeared, but came back into favour when Fay and Sir John Tomes shaped the beaks to fit the necks of the various forms of teeth and the forceps once more took their rightful place in the practice of dental surgery. A considerable portion of this chapter is devoted to the ingenious instruments designed for perpendicular extraction—truly fearful and wonderful in their construction. A chair was even designed to help in the operation. Compound instruments are taken into account in the last pages. Too high praise cannot be given to his work which embodies the results of the study and thought of a lifetime spent in visiting museums in different parts of the world, reading the literature of the subject and searching into any other matters that might throw light upon it. The author's great gift as a teacher has helped him to explain and to illustrate the intricate composition of most of these devices, some of which would baffle observers less patient and painstaking.

The volume is beautifully illustrated and reflects credit on the printer, the artists who have drawn the figures and, above all, on the writer who has spent so much time, thought and money, to ensure that the working of the instruments is faithfully expressed in the pictures. These illustrations will be a source of delight to the imaginative person who will see in them many curious and fantastic attitudes. There is an appeal to all tastes in the book which will provide entertainment in addition to being a fountain of knowledge on many aspects of its subject. The book is well printed and opens as few modern books do in a most agreeable manner—altogether a delightful publication. The author with his well-known generosity has decided to devote all profits from the sale of the book to the Benevolent Fund of the B.D.A.

THE BRITISH DENTAL ANNUAL 1952. First issue. Edited by Evelyn Sprawson, *M.C.*, D.Sc., F.D.S., M.R.C.S., Consulting Dental Surgeon to the London Hospital, etc. London: Butterworth & Co. (Publishers) Ltd. 1952. Pp. x + 262 + index. Price 35s.

This annual was designed to fill a gap in British dental literature. Part I of the first issue attempts through original articles by recognised authorities a critical survey of such subjects as the state of oral surgery and pathology, preventive conservative and prosthetic dentistry, and orthodontics. Research is covered by articles on radioactive isotopes, histochemical techniques, ground sections and bacteriology. In view of the recent controversy on the future of the School Dental Service the long and factual report on this service is timely. An especially valuable article for the practitioner is on the ethical and legal aspects of dental practice. Part II gives useful information on dental schools, libraries, qualifications for degrees, courses, etc., in various parts of the Commonwealth. Abstracts from the dental literature of the preceding two years are to be found in Part III. This contains 45 pages only and many of the 15 subjects included are inadequately covered by the abstracts. It is unfortunate that at the time of publication of the first issue the paper shortage in this country was acute. Consequently its appearance is rather disappointing and is not helped by the very few illustrations. It is to be hoped that the second issue of this annual, which promises to become a really valuable addition to British dental literature, may achieve a more attractive guise.

1952 SUPPLEMENT TO THE BRITISH PHARMACEUTICAL CODEX 1949. London: The Pharmaceutical Press. 1952. Pp. 148 + xii. Price 25s.

This publication consists for the most part of additions and amendments to the Pharmaceutical Codex. It is therefore necessary to use it in conjunction with the Codex.

There are, however, a few new monographs on the newer antibiotics, which are of particular interest to the dental surgeon. These explain the advantages and disadvantages of the particular combinations, which are available in such profuse variety to the profession.

The monographs on oxidised cellulose and absorbable gelatin sponge are valuable. The description of the various preparations of human blood have to be studied in conjunction with the Codex. The 1952 Supplement should be in all dental departmental libraries.

Lymphocytes in the Epithelium of the Healthy Gingiva.—Most histologists agree that small numbers of lymphocytes are normal constituents of connective tissue. The examination of 50 interproximal gingival biopsies from persons ranging in age from 13 to 55 with no evident gingival pathology confirmed the presence of lymphocytes in small number in the epithelium of healthy gingiva. It was possible to distinguish them from epithelial cells quite easily by the use of suitable stains. They were all situated between the epithelial cells and the majority were in the basal layer, although some could be found in the prickle cell layer. They were rarely found beyond that layer. In the basal layer the adjacent epithelial cells were distorted by the lymphocytes which themselves showed marked variation in shape with both cytoplasm and nucleus drawn out into irregular shapes and with slender processes projecting between the epithelial cells. In the prickle cell layer, however, the lymphocytes appeared to recover their normal shape and to be in fact larger than most lymphocytes found in connective tissue. No mitoses or amitoses were seen in the lymphocytes and, apart from compression, there were no changes in the cytoplasm or nuclei of the adjacent epithelial cells. Although the function of lymphocytes is not fully understood, most workers now agree that they are capable of amœboid movement. It is presumed that lymphocytes migrate into the surface epithelium of the gum by amœboid activity as part of their behaviour as defence cells.—CATTONI, M. (1951) *J. dent. Res.*, **30**, 627.

Studies in the Regeneration and Reattachment of Supporting Structures of the Teeth. II.—Regeneration of Alveolar Process.—In a previous study it had been demonstrated that reattachment of soft tissues which had been detached from teeth of dogs surgically may be obtained, with some new formation of bone. The present experiments were undertaken in order to try to determine whether the cementoblasts and osteoblasts concerned are derived from the adjacent cementum and bone or arise *de novo* in the granulation tissue of repair. In the latter event it is important to determine the environmental factors upon which the differentiation of osteogenic cells depends. Gingival flaps were turned back from the labial aspects of the upper canines of three dogs. The alveolar bone over the roots was removed together with the periodontal membrane. In some cases the area was filled with chips of alveolar bone and in others with bone chips mixed with small chips of the exposed root. The gum flaps were then returned and the animals sacrificed after 12 to 130 days. In the sections the area of bone removed could be identified by the wavy outline of the denuded root. After 17 days new trabeculæ of bone were present opposite the denuded root, having apparently grown out from the cut edge of the alveolar process at the base of the wound. In the specimens where bone chips had been inserted, although the cells of the chips had not survived, the trabeculæ of new bone were much more extensive. Both chips of bone and cementum appeared to stimulate bone formation equally. A new cementoid tissue, indistinguishable histologically from the osteoid being deposited on the bone chips, was deposited on the denuded root surface. The observations do not conclusively prove the origin of the osteoblasts forming the new bone but the evidence favours an origin from the bony margins of the wound. The cells of the chips do not contribute directly to the osteogenesis but the calcified matrix appears to exert some influence over the process.—LINGHORNE, W. J., and O'CONNELL, D. C. (1951) *J. dent. Res.*, **30**, 604.

Recurrent Herpetic Stomatitis Treated by Intradermal Injections of Influenza A and B Virus Vaccine.—The treatment of recurrent ulceration of the inside of the lips and cheeks of a female aged 28 years is described. A 15 year history was given, and since marriage at age 20 the ulcers, 3 or 4 at a time, had appeared at monthly intervals approximately one week before menstruation, and normally disappeared at the end of the menstrual period. An increase in the severity of the lesions during times of emotional stress had been noted. During four pregnancies there had been a flare up at the onset, followed by a complete disappearance of the ulceration for the duration of the pregnancy. The patient's mother gave a similar history of recurrent oral ulceration, which disappeared with the menopause. Previous treatment of the daughter by progesterone injections had been ineffective. A biopsy of one of the lesions revealed intranuclear inclusion bodies characteristic of herpes simplex virus. After repeated smallpox vaccinations had produced no improvement, a course of intradermal injections of influenza A and B virus vaccine was commenced. When eight injections over a period of 28 days had been given, the patient showed signs of sensitisation to the virus and the course was discontinued. Considerable alleviation of the symptoms was noted for some months but exacerbation occurred during a time of severe emotional stress. Following this the patient had been free of ulceration for three months. It is suggested that if the patient can lead a calm and equitable life she may be free of ulcers indefinitely.—COLLINGS, C. K., and DUKES, C. D. (1952) *J. Periodont.*, **23**, 48.

Fluid Exchange at the Margins of Dental Restorations.—A self-curing acrylic restoration was placed in an extracted tooth and the tooth was immersed in ice water for thirty seconds, removed, wiped dry and viewed under a binocular microscope as the tooth warmed in the fingers. Small droplets of fluid were seen to exude from the margins of the filling. This was found to occur with all types of acrylic restoration, and also to some extent with amalgam,

gold inlay, silicate cement, gold foil, gutta percha and zinc oxide eugenol cement restorations in extracted teeth. Yet when the same test was applied to extracted teeth in which amalgam fillings had been in place for some time prior to extraction, no evidence of marginal seepage was observed. Teeth containing different types of restoration were then viewed in the mouth with the binocular microscope. After chilling the teeth, no direct evidence of marginal seepage was observed in amalgam, gold inlay, gold foil and silicate restorations which had been in the mouth for some time, but seepage always occurred with acrylic restorations. It is suggested that the high coefficient of expansion of acrylic resin is responsible for this seepage, but that the margins of the other types of fillings in the mouth may become choked with debris or corrosion products of the filling material. Further observation of the efficiency of the direct filling resin as a permanent filling material is required.—NELSEN, R. J., WOLCOTT, R. B., and PAFFENBARGER, G. C. (1952) *J. Amer. dent. Ass.*, **44**, 288.

Periodontal Disease.—Orban stresses the necessity for applying the principles of general pathology to a study in classification of disease of the supporting tissues of the teeth. He considers the basic lesions which are to be found in these tissues as being inflammatory, regressive or productive. No mention is made of neoplastic lesions. The inflammatory lesions are subdivided into gingivitis and periodontitis; the regressive changes into degenerative, being either gingivosis or periodontosis, atrophic and traumatic. The productive group is confined to gingival hyperplasia of non-inflammatory origin. A lucid expression of the author's belief in the part which occlusal trauma plays in periodontal disease is contained in this paper. He states that pressure necrosis is the primary feature, that traumatism can develop as a primary disturbance even if the supporting tissues of the affected teeth are healthy, and as a secondary disturbance when the supporting tissues have suffered destruction due to other periodontal disease. He is emphatic in his belief that occlusal trauma is not a primary ætiological factor in the development of gingivitis, periodontitis, gingivosis, periodontosis, atrophy or hyperplasia. Not every occlusal disharmony is traumatic, and the association of such disharmony with periodontal disease may be purely coincidental, occlusal trauma being most frequently secondary to the periodontal disease. He concludes by saying that the era of treatment based purely upon clinical observation and empirical conclusions and results, has now passed, and treatment must be based on facts established by histopathological and experimental studies.—ORBAN, B. (1951) *Internat. dent. J.*, **2**, 185.

Dental Disease Among 14-year-old London School-Children in 1947 and 1950.—The results of two dental surveys of 14-year-old school-children carried out during the winter months of 1947–8 and 1950–1 are reported. The children were attending modern, technical and grammar schools and numbered 1,216 in the earlier year and 1,089 in the later. Examination was by probe and illuminated mirror, and caries was assessed by the D.M.F. and A.C.F. methods. Gingivitis was graded as "0" for normal gingivæ, and 1, 2 and 3 for mild, moderate and severe gingivitis respectively; the amount of tartar present was similarly graded. The proportion of children found to be free from caries was 11·5 per cent in 1947 and 16·1 per cent in 1950. These results are compared with figures from different parts of the world. In the present study the overall caries incidence of the teeth was 14·6 per cent in 1947 and 13·9 per cent in 1950, but in the 1950 group slightly more lesions were found in the upper incisors, and less in the first molars. Treatment (fillings and extractions) which the teeth had received showed a reduction of 5 per cent in 1950 compared with 1947. Gingivitis of varying degrees was found in 73·7 per cent of the 1947 group and 85·1 per cent of the 1950 group, and there appeared to be some relation between the amount of tartar and the incidence and extent of the gingivitis.—MELLANBY, M., MELLANBY, H., JOYNER, J., KELLEY, M. (1952) *Brit. med. J.*, **1**, 7–13.

THE HEALTH SERVICE

NATIONAL HEALTH SERVICE CHARGES

ON July 2 the House of Commons debated motions for the annulment of the Regulations imposing charges for dental treatment, drugs, appliances and hospital accommodation.

Mr. Blenkinsop (Newcastle-on-Tyne) said it was a tragedy that so many professional men to-day, dentists as well as doctors, were having to spend so much more of their time upon the administrative side when they ought to be devoting the whole of their time to the job for which they were qualified. Through the Regulations under discussion professional men were being made into tax gatherers and there was no section of the community which was less popular in the minds of the general public than tax gatherers.

Mr. Fort (Clitheroe) hoped that arrangements would be made between the Ministry of Health and the National Assistance Board to ensure that dental work was not held up for those who needed help from the Assistance Board. Prompt payment should be made to the dentist and therefore prompt work done for the patient.

Mr. Baird (Wolverhampton) said there was a large amount of ill-feeling being caused between patient and practitioner because of the imposition of these charges. He made a forecast that at the end of the financial year the money received from the dental charges would be very much higher than the saving estimated by the Minister. The reason for this was that the dental charges were causing great hardship and people were not receiving treatment. The dental health of the general public was suffering already.

He quoted figures supplied by the British Dental Association of one dentist working in an industrial area with a partner which showed that up to June 1, 1952, he had examined between 250 and 300 new patients per month. In June, as a result of the new Regulations, he interviewed only 35 new patients.

Dentists in industrial areas were suffering very severe hardship and he hoped the Minister would investigate their financial position. The income of many dentists was lower now than it was before the war.

Mr. Baird also complained about the complexity of the forms which dentists must use. For a simple operation a dentist now had to make about 46 entries.

The work of the Dental Estimates Board must have been considerably diminished as a result of the fall in the demand for treatment and he wondered if anything was being done to cut down the staff of the Board. As a working dentist he had found that one result had been that dentists were getting many more needless and pin-

pricking letters from the Board on all sorts of silly matters. Money could be saved by cutting out waste in connection with the Dental Estimates Board.

Patients all over the country were cancelling appointments because they had to pay for treatment and could not afford to do so. The charges for treatment might force dentists into the school dental service by bankrupting dentists but this would not solve the school dental problem. He urged the Minister to look into the financial affairs of the dental profession since if he did not the dental health of the great mass of the people, particularly in industrial areas, would suffer considerably.

The Minister of Health, Mr. I. Macleod, said that the introduction of the new charges had necessitated the use of an additional form, E.C.60. This new form would soon be merged with the E.C.17.

There had been a substantial fall in the demand for dental treatment during June and a substantial proportion of the estimates submitted had been for patients who claimed exemption. It followed therefore that the policy of the Government that dental treatment should go to those in most need was being implemented. At the same time the number of dentists in the school dental service had risen from 716 to 793 during the last six months and that trend was continuing. The teeth of the priority classes would therefore in future be better looked after than they ever had been.

The motions for the annulment of the Regulations were eventually defeated.

REMISSION OF CHARGES FOR DENTURES

THE Secretary of State for Scotland has made an Order, S.I. 1952, No. 1029 (S. 48), under which dentures provided as part of a course of clinical teaching at the dental hospitals of Dundee, Edinburgh and Glasgow will be provided without cost to the patients.

This concession has been made in accordance with an amendment inserted in the National Health Service Act, 1952(a) during its passage through Parliament.

AMENDMENTS TO THE SUPERANNUATION REGULATIONS

ON June 25 the House of Commons confirmed draft amendment Regulations on superannuation. These Regulations contain a number of minor alterations to the scheme, one of which provides that contributions payable by the patient towards the cost of treatment under the National Health Service Act 1952 shall be regarded as part of the dentists' remuneration for superannuation purposes.

Mr. Blenkinsop (Newcastle upon Tyne) said that he wished to call attention to a point of principle. They were approaching a point, if they had not already reached it, where the bulk of the revenue received by dentists would not be from the State but from the patients. He asked whether the House was satisfied in continuing with provisions for the maintenance of superannuation Regulations for dentists when, in fact, the State was to some extent ceasing to be the employer. As far as he could understand it was the intention of the Minister of Health not only to approve the existing charges for dental treatment but possibly to propose other charges later. If that happened the State would cease almost wholly to be the employer and he asked whether it was proposed to maintain superannuation Regulations on the assumption that the State was the whole or at least the main employer of the dentists in the country.

He asked that the Minister should either say that health charges in relation to dental treatment were purely temporary or, alternatively, would give some assurance that the Government were prepared to reconsider the whole question of the Regulations in view of the fact that the State ceases very largely to be the dentists' employer.

The Parliamentary Secretary to the Ministry of Health remarked that Mr. Blenkinsop had moved exactly similar Regulations in 1951, based on the same principle with respect to charges for dentures. There was no change of principle here. The fact that the charges had been extended could not alter the principle that they were part and parcel of the general remuneration of dentists: as such, in all fairness they should be computed as part of their remuneration for the purposes of superannuation assessment.

It was impossible to believe that the House seriously considered that dentists should be deprived of this particular part of their remuneration for the purpose of computing their superannuation assessment. This would be a very grave injustice to one section of practitioners in the service by depriving them of their normal rights under the National Health Service Superannuation Scheme.

SCOTTISH HEALTH SERVICE NOTES

Relines and Examination Fee.—During April and May perplexed members were urgently drawing the Association's attention to the fact that in cases where they had submitted E.C.17s for relines, and claimed the appropriate examination fee, they were receiving pro forma slips from the Scottish Dental Estimates Board with the following statement:

> "Relines are now classified as repairs, and if the patient is edentulous, no exam. fee is admissible."

As the Association had no previous intimation of this new interpretation of the Regulations the matter was at once taken up with the Department of Health for Scotland who readily gave the assurance that they had no doubt whatever that there is a distinction between denture repairs and denture relines, and consequently that a fee is payable for the examination of an edentulous person who needs a denture or dentures relined. It is understood that the Scottish Dental Estimates Board have already changed their practice; but should any members hold E.C.17s on which the examination fee has been repudiated for this reason, it is suggested that they be resubmitted to the Board.

Treatment Charges and Date of Examination.—Section 2, paragraph (3) of the National Health Service Act 1952 states "No charge shall be made under this section in respect of any services provided in pursuance of a contract or arrangement under which the first examination took place before the commencement of this Act." This seemed fairly definite and clear but the new charges system had only been running a few days when Scottish dentists were reporting to the Association that, in cases where they had examined patients prior to June 1, and inserted the examination date at the top of Part 7 of the E.C.17, and then subsequently signed Part 2, when submitting the case for prior approval, dating it after June 1, the Scottish Dental Estimates Board was instructing these dentists to amend the date in Part 7 to correspond with the date in Part 2, and attach an E.C.60. In one case at least, which came to the Association's notice, this peculiar interpretation by the Board took the form of an arbitrary alteration in red ink of the date entered by the dentist in Part 7 from 30.5.52 to 2.6.52 (the date on which he signed Part 2), and the return of the estimate to him with a pro forma slip which read "The attached estimate form is returned in order that Form E.C.60 may be attached."

Immediate representations were made to the Department of Health for Scotland who are understood to

have obtained the assurance of the Board that henceforth the date on Part 7 will be recognised as the relevant date in considering the incidence of charges, and it is suggested that any dentists who may have had forms returned to them in these circumstances should resubmit them to the Board without an E.C.60.

QUESTIONS IN PARLIAMENT

Treatment of School Children.—In a written reply on June 26 the Minister of Health stated that between April 1, 1950 and December 31, 1951, some 1,260,000 courses of treatment were given under the General Dental Services to children aged 6 to 15 years.

Health Centres.—In a written reply on June 26 the Minister of Health stated that twenty-five health centres were now in existence, all of which except one had been taken over when the National Health Service began. The development of Health Centres must be subject to the present limited building resources which made any general expansion impracticable.

Dental Patients—Identity Numbers.—On July 2 Mr. Maitland (*Lanark*) asked the Minister of Health how he proposed to secure dental patients' National Registration numbers, so that dentists practising under the Health Service could obtain the compensation payments due to them, when registration numbers are no longer recorded on ration books and the public has been freed of the obligation to carry identity cards.

In a written reply the Minister of Health stated that patients had been asked to insert their National Health Service number on their medical card and any patient unaware of his number should write to his local Executive Council which would inform him of it.

Public Dental Service

CITY OF MANCHESTER EDUCATION COMMITTEE

Annual Report 1951

Dr. C. Metcalfe Brown, the School Medical Officer, refers to the lessened demand under the National Health Service and the consequent good prospect of improvement in the school staffing position. Two new dental surgeries were nearing completion and two mobile clinics were soon expected to be operating. Mr. Byrom, Senior Dental Officer, reports that the staffing position during the year had not materially improved and that far too much work of a destructive nature had to be faced. Half of the children seen were treated for relief of pain or sepsis. In happily chosen words, Mr. Byrom declares his conviction that " with an adequate staff working in useful and dignified premises, regular dental attention soon becomes part of the school life of the young child." The school population in Manchester is 105,972 and the establishment remains at one senior and eighteen dental officers. At the end of 1951 there were available the equivalent of just under twelve. During the year 48,652 children were inspected and 24,652 received treatment. Mr. Batten visited the orthodontic clinic one session monthly. The Dental Hospital continued its research into the various types of preventive treatment under the direction of Mr. J. Miller, M.D.S., head of the Children's Department. The results so far have been of a negative nature but it is hoped to have a preliminary report on recent studies during 1952.

DENTAL NEWS

DURHAM COUNTY COUNCIL "CLOSED SHOP"

Following a meeting between representatives of the Durham County Council and the Joint Emergency Committee of the Professions held at the suggestion of the Ministry of Labour, it has been agreed that the matter in dispute between the parties shall be submitted to arbitration. Both parties have agreed to accept and implement the arbitrator's award and in the meantime the Durham County Council, on the one hand, have suspended the portion of the Regulation which gave rise to the dispute, the National Union of Teachers have withdrawn the notices of resignation which had been handed in on behalf of their members, and all other sanctions against the County Council have been cancelled. The terms of reference agreed by the parties are as follows:

" It being accepted by the parties that the professional employees of the County Council represented by the Joint Emergency Committee of the Professions—namely, doctors, dentists, professional engineers, midwives, nurses, and teachers—should not as a condition of employment be required to belong to a trade union or professional organisation, the Board are asked to determine:

(i) whether the present regulations of the council governing the making of applications for extended sick pay are in conflict with the principle of voluntary membership of a trade union or professional organisation and should therefore be withdrawn; or

(ii) whether the regulations are made in the proper exercise of the discretion vested in the council in the granting of extended sick pay and are not in conflict with the principle of voluntary membership of a trade union or professional organisation."

The Minister of Labour has appointed Sir John Forster, Q.C. (President of the Industrial Court), to be chairman of the Arbitration Board, with the following two members: Professor D. T. Jack (professor of economics, Durham University), and Mr. J. W. Bowen (formerly chairman of the London County Council). The board will meet on July 15.

PRIORITY CLASS TREATMENT

Addressing the Annual Conference of the National Association for Maternity and Child Welfare the Minister of Health, Mr. Iain Macleod, stated that the Government were most anxious that mothers should obtain proper dental care and were concerned at the lack of dentists available for treatment of priority classes. He was, however, glad to see that local authorities were succeeding in getting more staff, and he was anxious to see every encouragement to dentists willing to undertake priority work at clinics, including those already established in practice who might be prepared to put in one or two sessions weekly for the treatment of mothers and children.

DENTISTS—DISCIPLINARY CASES

On June 12 Mr. W. T. Williams (*Hammersmith*) asked the Minister of Health how many of the cases of disciplinary action taken against dentists related to dentists employed by corporate bodies.

The Minister said that 43 cases had been investigated. He thought that there was a total of 200 dentists employed by bodies corporate and 67 of those were employed by the Co-operative Dental Association. Only 4 of the disciplinary cases referred to applied to them. The number of disciplinary cases against dentists in private practice was 966 up to May 31, 1952.

In a supplementary question, Mr. Williams suggested that dentists practising privately were a good deal more culpable than dentists employed by corporate bodies and he asked the Minister to reconsider his ill-starred Dentists Bill, which was designed specifically to operate against

corporate bodies and the appointment of dentists. Corporate bodies were a good deal more responsible to the public than private dentists.

DR. KING LECTURES IN SWEDEN

On the invitation of the Royal Dental Colleges of Stockholm and Malmö, Dr. J. D. King, Director of the Medical Research Council's Dental Research Unit, visited Sweden during May. Six lectures on research were given to the staff and students of the two dental schools. An address was also given to the Swedish Dental Society in Stockholm, and Dr. and Mrs. King attended the University of Stockholm Degree Ceremony and banquet as guests of the Colleges.

Examination Results

University of Bristol.—*Final B.D.S.*—Joan M. Flint, R. L. Griffiths, A. Sander. *Final L.D.S.*—C. G. Innocent, A. Z. Lenko, D. R. Salter.

University of Durham.—*Final B.D.S.* (2nd Class Honours).—A. C. Birch, G. W. E. Milburn, C. Morsman, A. J. N. Swann. Pass: A. F. Adams, J. C. Adicitey, G. Broome, P. M. Calamel, I. Chalmers, J. L. Esther, D. G. French, Miss M. Hall, D. B. Hurst, K. Hutchinson, D. Jackson, D. Josephs, A. Kwamina-Amoah, A. G. Lowes, A. V. Marques, N. E. D. Obasi, V. E. O. Portuphy-Wellington, A. R. Proctor, H. A. Seedat, G. H. Steel, W. Thompson, B. T. Williams. *Final L.D.S.*—C. D. Anderson, G. Barker, R. O. Browne, G. W. R. Bryant, F. B. Burningham, F. H. F. Clapperton, B. L. Davies, Miss P. Donaldson, A. J. H. Edmond, C. F. K. Evans, Miss S. M. Flynn, P. W. Gibson, J. M. Harper, H. C. Henderson, J. D. Henri, R. D. Jefferies, G. J. Kemeny (with Distinction in Medicine and Surgery), D. E. Lowes, B. L. N. Rao, H. P. Redfearn, Miss C. Richardson, A. E. Thomson, J. K. Wilkie.

University of Manchester.—*Final B.D.S.*—Bryan Clowes, A. A. Davies, A. C. Doyle, W. Peberdy. The following satisfied the examiners *at L.D.S.Standard:* F. E. Futcher.

Final L.D.S.—E. J. S. Clifford, G. J. Hammersley, C. V. Heap, W. D. Holliday, R. D. G. Pickerill, D. F. Ringrose, L. R. Robson, Margaret Shackleton, F. K. Titterington.

Royal College of Surgeons of Edinburgh.—*Final L.D.S.*—H. Clunas, P. F. A. Eltome, R. C. Gairee, R. T. Hamilton, F. B. Marshall, W. E. A. Scott, A. G. W. Smith, W. S. Smith.

Royal Faculty of Physicians and Surgeons of Glasgow.—*H.D.D.*—D. N. Campbell, John Campbell. *D.D.O.*—R. A. Abbey, A. J. P. Cousins, J. E. Keith, W. R. Logan.

The Services

Royal Navy.—The following promotions have been announced:

Surgeon Lieutenant-Commander (D) to Surgeon Commander (D): W. G. Smith, K. S. Armstrong-Lamb, K. A. Johnson, E. W. King Turner.

Royal Naval Volunteer Reserve.—Surgeon Commander (D) to Surgeon Captain (D)—J. E. Daniels.

Surgeon Lieutenant-Commander (D) to Surgeon Commander (D)—E. E. H. Sampson.

Obituary

CHARLES READ, F.D.S. R.C.S.Edin., F.R.F.P.S.Glas., L.R.C.P.&S.Edin., L.D.S.Glas.

Mr. Charles Read of Glasgow died on July 3, 1952. He took his L.D.S. in 1913 and the L.R.C.P.&S.Edin. in 1915, and the F.R.F.P.S.Glas. in 1922. He was lecturer in dental radiology and visiting dental surgeon to the Glasgow Dental Hospital and an examiner for the first dental examination of the Royal Faculty of Physicians and Surgeons, Glasgow. J. M. C. writes:

May I, who was a student with Charles Read, pay this short tribute to his memory. He was deservedly popular with all of us, due to his unmistakable integrity, sincere friendship and sound judgment. Never at any time a place-seeker, it was entirely foreign to his generous nature even to attempt to gain ascendancy by intrigue or an unkind deed. These sterling qualities persisted throughout a highly successful professional career.

He was essentially a modest person, who sought neither praise nor honours, although these inevitably came his way. For instance, he was a recent President of the Odonto-Chirurgical Society of Scotland. It is fitting to mention that the pleasure which he derived from this was due fundamentally to the wider opportunities thereby afforded him to uphold and develop the highest traditions of his profession. His memory will remain fragrant and inspiring to all who knew him.

To Charlie Read may, appropriately, be applied the words of Robert Louis Stevenson: "The best that we find in our travels is an honest friend."

John McCurdy, L.D.S.Edin., Lieut.-Colonel, R.A.D.C. (retd.), died at Ballymena, Northern Ireland, on June 22, 1952. He qualified in Edinburgh in 1917 and joined the Army as a dental surgeon in 1918. He was a prisoner of war in Hong Kong for almost four years during the last war and as a result suffered greatly in health. He retired from the R.A.D.C. in 1948.

The Charge for Announcements of Births, Marriages and Deaths is 2s. 6d. per line. (Approximately 8 words.) Minimum 7s. 6d.

Births

ATTALE.—On June 27, 1952, at St. George's Wood, Haslemere, to Margot (*née* Kearney) wife of Jeffery Attale, a second daughter.

BEALES.—On May 22, at Nuffield House, Guy's Hospital, to Ruth (*née* Burgess), wife of C. Maxwell Beales, L.D.S. R.C.S.Eng., a daughter—Carol Anne.

JARRETT.—On June 28, 1952, at Buckland Hospital, Dover, to Phyllis (*née* Armstrong), wife of Kenneth Jarrett, L.D.S. R.C.S. Eng., a daughter (Elizabeth Ann).

McFARLAND.—On June 22, at the Lady Rodwell Hospital, Bulawayo, S. Rhodesia, to Dorothy, wife of N. K. McFarland, L.D.S.U.St.And., a daughter.

Our Diary

Tuesday to Friday, July 15 to 18.

The American Dental Society of Europe.—Annual Meeting, Royal College of Surgeons, Lincoln's Inn Fields, London, W.C.2.

Thursday, July 17.

The University of London.—Lecture, Royal Dental Hospital of London School of Dental Surgery, 5.30 p.m. "Classification and Diagnosis of Periodontal Diseases," Dr. B. Orban.

Friday, July 18.

The Royal College of Surgeons of England.—Charles Tomes Lecture at the College in Lincoln's Inn Fields, London, W.C.2, 5 p.m. "Sir John Tomes—A Great Dental Pioneer," V. Zachary Cope, F.R.C.S.

Saturday, July 19.

Surgical Instrument Manufacturers Association (Inc.).—Dental Laboratories Section.—Conference, Holborn Restaurant, London, W.C.1, 11 a.m. "Laboratory Activities and Conditions in the U.S.A.," R. J. Rothstein. Tickets are obtainable on application to C. M. Booth, 6, Holborn Viaduct, E.C.1.

Saturday to Saturday, July 19 to 26.

XIth International Dental Congress.—Opening Ceremony, Saturday, July 19, Royal Festival Hall, London, S.E.1, 11 a.m.

Monday, July 21.

Dental Technology Society.—Table Exhibition, Eastman Dental Hospital, Gray's Inn Road, London, W.C.1, 6.30 p.m. Members of the Dental profession cordially welcomed.

Wednesday, July 23.

XIth International Dental Congress.—Ball, Royal Albert Hall, 9 p.m., until 2 a.m. Open to all members of the profession and their friends.

Tuesday, July 29.

Royal College of Surgeons of Edinburgh.—William Guy Memorial Lecture in the Hall of the College, 5 p.m. "Dr. William Guy, a National and International Leader of Dentistry," C. F. L. Nord.

BRITISH DENTAL JOURNAL

Communications with regard to editorial business should be addressed to THE EDITOR, *BRITISH DENTAL JOURNAL*, 13, Hill Street, Berkeley Square, London, W.1. Telephone: Grosvenor 2761. Telegrams: "Bridention," Audley, London.

Original Articles and Letters submitted for publication are presumed to be offered to the *British Dental Journal* only unless the contrary is stated.

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BRITISH DENTAL JOURNAL SUPPLEMENT

July 15, 1952

ASSOCIATION NOTICES

BRITISH DENTAL ASSOCIATION

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Telephone Nos.: Grosvenor 1592, 1595.
Journal Office: Grosvenor 2761.

XI INTERNATIONAL DENTAL CONGRESS

GROsvenor 3020

Dentists' Provident Society and Dentists' Insurance Committee.

20, Bruton Place, Berkeley Square, London, W.1.
Telephone No.: GROsvenor 1172.

BENEVOLENT FUND

The Honorary Treasurer (Mr. John Sturrock) gratefully acknowledges the receipt of the following:

Donations

The Medical Insurance Agency, £250; Bognor Regis, Chichester and District Section, £5 5s.; Anonymous Gift £1 10s.; Rugby Division, £1 8s.; Leeds Dental Golf Circle, A. W. Anderson and W. S. Thorburn, £1 1s.; Coventry Section, 16s. 6d.; G. H. Steel, 10s.; Miss P. Donaldson, 5s.

Waste Amalgam

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By the latest sale of Waste Amalgam a further sum of £53 13s. 4d. has been realised making a total of £4,408 16s. 10d. Will members who have any considerable quantity of waste amalgam kindly forward this to the Honorary Treasurer, 13, Hill Street, Berkeley Square, London, W.1, at their early convenience.

LIBRARY AND MUSEUM

DURING the period of the Congress, from Friday, July 18 to Friday, July 25, a small collection of some of the Association's old books will be on view in the Robert and Lilian Lindsay Library, and an exhibition of prints and engravings and objects from the Museum will be arranged on the second and third floors at Headquarters.

XITH INTERNATIONAL DENTAL CONGRESS

July 19–26, 1952

Patron—HER MAJESTY THE QUEEN

SUMMARY DAILY PROGRAMME

(NOTE.—Unless otherwise stated *all* meetings are in the Royal Festival Hall.)

Friday, July 18.

9.30 a.m. Registration Section open.

Saturday, July 19.

9.30 a.m. Registration Section open.

11.00 a.m. Official opening of Congress by Rt. Hon. Iain Macleod, M.P., Minister of Health.

11.00 a.m. Traders' Exhibition opens.

2.30 p.m. Official opening of Dental Health Exhibition at London County Hall (adjoining Royal Festival Hall) by Miss P. Hornsby-Smith, M.P., Parliamentary Secretary, Ministry of Health.

4.00 p.m. British Dental Association Garden Party.

5.00 p.m. Presentation of British Dental Association Honorary Membership to Congress Delegates.

Sunday, July 20.

9.30 a.m. Registration Section open.

10.00 a.m. onwards All day tours.

7.30 p.m. Concert in Royal Festival Hall.

Monday, July 21.

9.30 a.m. Registration Section open. Oral Health Exhibition open. Traders' Exhibition open.

10.00 a.m. Formal opening of Scientific Programme by Sir Alexander Fleming, F.R.S.
Discussion on Control and Prevention of Dental Caries.

10 a.m. to 4.00 p.m. International Reports: 10 a.m. Anatomy and Histology: Professor I. Schour (U.S.A.); 2 p.m. Oral Surgery: Dr. Malcolm Wallace Carr (U.S.A.); 2.30 p.m. Pathology: Professor M. A. Rushton (G.B.), and Dr. J. P. Weinmann (U.S.A.); Children's Dentistry: Dr. S. A. Macgregor (Canada).

10.00 a.m. and 2 p.m. Table Demonstrations.

9.30 a.m. to 4.30 p.m. Scientific Films.

11.00 a.m. and 3 p.m. Large Screen Television in the South Bank Telekinema (detailed programme from information office).

10.00 a.m. to 4.00 p.m. Demonstrations at Dental Schools and Hospitals (Admission by ticket only). Queen Victoria Hospital, East Grinstead, Sussex.

Tuesday, July 22.

9.30 a.m. Registration Section open.

9.30 a.m. to 4 p.m. International Reports: 9.30 a.m. Restorative Dentistry: Dr. Stanley Tylman (U.S.A.); 11.30 a.m. Public Dental Service: Mr. John W. Gilbert (G.B.); 2 p.m. Orthodontia: Professor Anders Lundström (Sweden); 4 p.m. Full and Partial Denture Prosthesis: Professor R. Marguerite (France).

10.00 a.m. and 2 p.m. Armed Forces Dental Section: 10 a.m. Paper: "The Organisation of a Dental Service in the Fighting Forces": Colonel D. J. Mull (Royal Army Dental Corps); 2 p.m. Paper: "Professional Educational Programme for Dentists in the United States Armed Forces": Brigadier-General Oscar Snyder (American Dental Corps).

4.00 p.m. Lecture: "Anæsthesia in Dental Surgery" by Professor R. R. Macintosh at Royal College of Surgeons, Lincoln's Inn Fields, W.C.2.

10.00 a.m. and 2 p.m. Table Demonstrations.

9.30 a.m. to 4.30 p.m. Scientific Films.

11.00 a.m. and 3 p.m. Large Screen Television in the South Bank Telekinema (detailed programme from information office).

10 a.m. to 4.00 p.m. Demonstrations at Dental Schools and Hospitals. Admission by ticket only.
10 a.m. Queen Victoria Hospital, East Grinstead, Westminster Hospital, Guy's Hospital, Medical Research Council (Dental Research Unit). 2.00 p.m. Guy's Hospital, National Dental Hospital, Medical Research Council (Dental Research Unit).

10 a.m. to 6.00 p.m.	Scientific Exhibition. Dental Health Exhibition, County Hall.
10 a.m. to 7.30 p.m.	Dental & Allied Trades Exhibition.
Evening	A number of receptions have been arranged including receptions by Her Majesty's Government and the London County Council.

Wednesday, July 23.

9.30 a.m.	Registration Section open.
10.00 a.m.	Discussion on Full Denture Prosthesis.
10 a.m. to 4.30 p.m.	International Reports: 10 a.m. Local Anæsthesia: Dr. Birger Ofstad (Norway); 2 p.m. Dental Caries—Ætiology: Dr. Robert G. Kesel (U.S.A.); 4 p.m. Dental Caries—Prevention: Dr. Lison (Belgium); 2.30 p.m. Dental Materials: Professor E. Matthews (G.B.).
10 a.m. to 4.30 p.m.	Table Demonstrations.
9.30 a.m. to 4.15 p.m.	Scientific Films.
11.00 a.m.	Large Screen Television.
10 a.m. to 4.00 p.m.	Demonstrations at Dental Schools and Hospitals: 10 a.m. Queen Victoria Hospital, East Grinstead; Kings' College Hospital; 10 a.m. and 2 p.m. Institute of Dental Surgery, Eastman Dental Hospital.
10 a.m. to 5.30 p.m.	Scientific Exhibition. Dental Health Exhibition (County Hall). Dental & Allied Trades Exhibition.
Evening	A number of official and private dinner parties have been arranged.
9 p.m. to 2.00 a.m.	The Congress Ball at the Royal Albert Hall.

Thursday, July 24.

9.30 a.m.	Registration Section open.
9.30 a.m. to 4.00 p.m.	International Reports: 9.30 a.m. Occlusal Relationship: Dr. Henry Beyron (Sweden); 11.30 a.m. Partial Denture Prosthesis: Dr. Alfred A. Steiger (Switzerland); 2 p.m. Endodontia: Dr. Louis J. Grossman (U.S.A.); 4 p.m. Public Dental Services: Dr. L. J. M. Spoorenberg (Holland).
10.00 a.m. and 2.30 p.m.	Armed Forces Dental Section: 10 a.m. Paper: "The Basis of Military Dental Training" by Commander van der Woerd (Royal Dutch Navy); 2.30 p.m. "Treatment of Maxillo-Facial Injuries in the Royal Air Force" by Squadron Leader T. G. Ward (R.A.F.).
4.00 p.m.	Lecture: "General Anæsthesia in the Chair" by Dr. W. S. McConnell at Royal College of Surgeons, Lincoln's Inn Fields, W.C.2.
10.00 a.m. and 2 p.m.	Table Demonstration.
9.30 a.m. to 5 p.m.	Scientific Films.
11.00 a.m. and 3 p.m.	Large Screen Television.
10 a.m. to 4.00 p.m.	Demonstrations at Dental Schools and Hospitals: 10 a.m. Queen Victoria Hospital, East Grinstead; London Hospital Dental School; Royal Dental Hospital; In-Patient Unit, Grove Hospital. 2 p.m. Royal Dental Hospital; In-Patient Unit, Grove Hospital.
10 a.m. to 6.00 p.m.	Scientific Exhibition. Dental Health Exhibition: County Hall.
10 a.m. to 7.30 p.m.	Dental & Allied Trades Exhibition.

Friday, July 25.

9.30 a.m.	Registration Section open.
10.00 a.m.	Discussion on Orthodontia.
10 a.m. to 4.30 p.m.	International Reports: 10 a.m. Dental Education: Dr. Shailer Peterson (U.S.A.); 2 p.m. Periodontal Disease—Ætiology: Dr. Balint Orban (U.S.A.); 4 p.m. Periodontal Disease—Prevention: Professor J. Staz (S. Africa); 2.30 p.m. Oral Medicine: Professor Dr. med. Silvio Palazzi (Italy).
10.00 a.m. and 2 p.m.	Table Demonstrations.
9.30 a.m. to 4.30 p.m.	Scientific Films.
10 a.m. to 5.00 p.m.	Demonstrations at Dental Hospitals and Schools: 10 a.m. Queen Victoria Hospital, East Grinstead; 9.45 a.m. and 1.45 p.m. Hospital for Sick Children.
11.00 a.m. and 3 p.m.	Large Screen Television.
10 a.m. to 6.00 p.m.	Scientific Exhibition. Dental Health Exhibition at County Hall.
10 a.m. to 7.30 p.m.	Dental & Allied Trades Exhibition.
Evening	The Congress Banquet at Grosvenor House Hotel.

Saturday, July 26.

10.30 a.m.	Closing Meeting.

NOTES.

Admission to all meetings and functions (except the Congress Ball) is strictly limited to those who have registered as members of Congress.

The Dental and Allied Trades Exhibition will be open to any member of the dental profession from 5.30 p.m. to 7.30 p.m. on Monday, July 21, Tuesday, July 22, Thursday, July 24 and Friday, July 25. On Wednesday, July 23, the Exhibition will close at 5.30 p.m.

ANNUAL MEETING—CARDIFF
September 1 to 5, 1952

President Elect—Mr. CLEMENT G. SPIRIDION

MEMBERS should by now have received the full Annual Meeting questionnaire with details of the arrangements made by the organising committee. They will materially assist by completing and returning them to Association Headquarters without delay.

Those who have not yet reserved hotel accommodation for the period of the meeting are urged to do so at once. A full list of recommended hotels and hostels will be found in the Supplement to the July 1 issue of the Journal.

Branches and Sections

Wessex Branch.—At a meeting of the Branch held on June 25, the following resolution was adopted: "As the latest Ministry of Health Regulations are the culmination of a series of impositions upon the dental profession, and have now reduced the profession to an intolerable position, we, members of the dental profession attending a meeting of the Wessex Branch of the British Dental Association on June 25, 1952, agree to submit our resignations from the General Dental Service to a

central pool, these resignations to be used only when 80 per cent (eighty per cent) of the British Dental Association members practising under the National Health Service Act Regulations have signed similar resignations.

We ask the British Dental Association to make provision forthwith for the collection of resignations."

Correspondence

Autonomy and All That.—I have recently been re-reading, for want of more stimulating literature, the Dentists Bill. Pregnant as it is, with revolutionary and refreshing notions, it contains nothing so fascinating as its proposals to give autonomy to the profession. Neither ancillaries, destined to change the nature of dental practice—and even the nature of dentists; nor the doubtful privilege of common title (whereby dentists, now called dentists—as we are all called—will call themselves "dental surgeons" and still be known, as we are known, as dentists)—neither of these is as interesting as the plan for self-government.

It would appear from the Bill—at least to my simple self—that in return for accepting the experiment of New Zealand's attempts to meet a shortage of dentists, we are to be offered complete control of our own affairs. And what more just? The Dental Board will die and rise, phœnix-like, as the General Dental Council (a title faithfully imitative of its medical counterpart). This body, heavily reinforced with academic minds, capable of, and empowered to determine the course of dental education, will govern our intellectual standards. And who can complain? Moreover, when the G.D.C. shall decide the fate of its delinquent colleagues it will no longer need to defer to the G.M.C. for ratification of its findings. Such will be the inestimable boons of autonomy, and for those who have so long coveted a legislated status as second best to the one we failed to acquire by merit, they will be welcome gifts. Yet, where is the autonomy?

A profession, educated to a standard of practice but limited in the application of that education by a statutory body, to wit, the Dental Estimates Board, mostly concerned with costs, will fall far short of achieving self government. With nearly 90 per cent of dentists having to defer to a bureaucratic department remotely, but effectively, controlled by a cautious Treasury, before they can provide what is arbitrarily termed "dental fitness," it is difficult to imagine dentists as autonomous. When one considers the regulations now governing the conduct of dental practice, the classic description of a dictator country is inescapable—a place where those things that are not enforced are prohibited. Whether N.H.S. machinery is just or unjust is not relevant here. Possibly, too, dentists are responsible for their present plight from which not even the strength of a well amalgamated and united B.D.A. can extricate them.

It is, of course, right and proper that a profession, standing in its own right and practising by virtue of its own licence, should control its own education. Equally reasonable is it that the Acts designed especially for such a profession should be administered by its own body, not answerable to any other. All this will be valued by those who have retained, doubtless with some effort, a pride in dentistry throughout its recent eclipse. Yet, the amount of autonomy it represents is little enough. We will be in the relatively improved position of being able to decide for ourselves who shall enter our register and how; who shall be erased from it. But while they are on it, as long as they behave in no way disgracefully or infamously, another body will continue to decide their way of practice. Especially must this remain so as the Bill provides that, the "general concern" of the G.D.C. "shall be to promote high standards of professional education and professional conduct." The standards of practice will continue to be nobody's general concern, while causing much they will remain as now, mostly the business of bureaucratic control.

I have examined this problem from many angles and can see but one, entirely improbable, solution—that the Dental Estimates Board become a standing committee of the new General Dental Council, its dental officers to be elected quinquennially from among the elected members of the General Dental Council—a wild dream, but after all not more absurd than that of complete autonomy.

Whatever the outcome of the Bill, and it seems unlikely that the organised profession will be able to affect that issue very much—its glittering bait of self-government should not dazzle us into complete blindness.—EDWARD SAMSON, *Aldington, Poole Road, Bournemouth.*

Treatment of School Children.—Leicester Local Education Authority, with the support of its Senior Dental Officer, apparently intended to relegate its remaining school dental officers to work that could probably be carried out by New Zealand-type dental nurses, i.e. treating infants.

What next? Ask Mr. Sutherland. Mr. Bevan can tell him the answer: abolish the school dental service and fill the gap with dental ancillaries.—I. F. BURNS, 12, *Templeland Road, Edinburgh,* 12.

Treatment of School Children.—Surely Mr. Hall has been too hasty? He accuses the B.D.A. of trying to make practitioners sign a form which would commit them to destroy the school dental service. If he will read the questionnaire again he will see that it is a request for information only.

The problems are difficult enough without imaginary ones within our own ranks. Whether one Ministry or two should be responsible for children's dentistry, whether the school dental service can come to a working arrangement with the G.D.Ps., whether follow-up treatment can be ensured for any child that has received fillings (this is not so at present), whether a service confined to children is better than one which treats whole families, and whether two rival services both equally available to the general public should be developed from the present services, are questions needing speedy answers.

The P.D.Os. and the general dental practitioners have been given the machinery within the B.D.A. for sitting down together and discussing such problems. The Council has quickly and wisely formed its new subcommittee for child dental treatment. May it receive all possible support from the profession.—C. N. JEFFRIES, 704, *Kingstanding Road, Birmingham,* 22C

Dental Ancillaries.—I do not believe that the presence of anatomical and abstruse involvements in denture construction and fitting constitutes a valid reason for objections to the employment of trained prosthetists, many of whom have had thirty years and more of practical training and, already, are not altogether unversed in the theoretical application of their craft. The fact must not be overlooked that nearly ten thousand unregistered practitioners were once called upon to undertake an immense responsibility; who will say that they failed to justify our confidence in their ability to adapt themselves to a reasonable standard of practice, including the theoretical calculations inherent in "the vertical dimension, the musculature of the mouth and the condylar path"? Can it be confirmed that an

appropriate selection of present day highly intelligent technicians would be any less capable?

Furthermore, I think Mr. B. G. Ashwell must have overlooked one or two fundamental points in his candid but, I suspect, involuntary exposition of the questionable technique of business all too prevalent in practices of today. His defeatist lament which reads ' . . . but, when the time comes (as it does to the great majority . . .)" does not lessen the significance of an implication which, in itself, is sufficient to justify strong comment. Surely, he does not propose that all the inexperienced and not fully competent should be detailed for the technically involved and most vital work of conserving the teeth, whilst the greybeards of our learned profession apply their accumulated store of knowledge, learning and wisdom to the creation of the crowning achievement, that corner-stone of dental "Surgery," the artificial denture?

I cannot believe that anyone can seriously suggest that as proud and trusted defenders of the dental health of the population, and after a lifetime of painstaking effort and struggle against the ravages of the unending and insidious attacks upon it, our obligations can be properly and humanely discharged by the mere presentation to the victim, of a set of æsthetically perfect false teeth. It would seem that this reasoning could embrace a logical parallel of reserving all the more learned and advanced medical practitioners for work on the measurement and construction of beautiful wigs.

Undoubtedly, however, the crucial point of my colleague's letter lies in his admission that " the newly qualified man falls down " in prosthetic work. Fortunately for all of us, the authorities have long insisted upon a curriculum arranged to equip students for ultimate practice as dental physicians and surgeons, not as prosthetists, it is, therefore, not surprising that throughout his career but more especially when first embarking upon the craft of denture construction and fitting, the practitioner is faced with one of the many humiliating situations in which any tradesman of any standing must inevitably find himself in this world where the customer is always right; situations, in fact, demoralising to patient and dentist alike and undoubtedly a deterioration factor in professional relationship with the community in general, a condition of affairs from which only the dental prosthetist can release us.—M. BLUNDELL WILSON, *Ticker, Sunnymeads, Wraysbury, Bucks.*

Is This Necessary?—A patient requested Health Service treatment. It was found that one extraction only was required. The procedure that follows accentuates the shortage of dentists. The identity number is ascertained from an Identity Card burned several months ago. Form E.C.17 is signed twice by patient. Form E.C.50 is signed once by patient. Form E.C.17A is signed once by dentist. Form E.C.50 (Pt. iii) is signed by dentist. Form E.C.17 is signed twice by dentist. A copy must be kept. Thus the extraction of one tooth requires seven signatures on four forms and after all the patient pays 6s. 9d. It is a nuisance to the patient and something worse to the dentist. The sole reason would seem to be an attempt to reduce the unemployment rates of clerks.—W. MALCOLM, 52, *Broad Street, Fraserburgh.*

Our Scottish Health Act Correspondent suggests that the above procedure is not strictly accurate. Normally for a patient requiring one extraction only we are informed that the dentist would sign E.C.17B, Emergency Form twice. E.C.17A Acceptance Card once. E.C.60 (Part iii) once, and the patient would sign E.C.17B once and E.C.60 (Part i) once. This is on the assumption that the dentist accepts the patient for emergency treatment under the Health Service. He is not, of course, under any compulsion to do so.—*Editor, B.D.J.*

NEW MEMBERS

(**W.L.**) AMES, Albany, Dentists Act, 86, Northgate Street, Chester.
(**N.C.**) BARNES, Arthur Charles Kirkley (Lieutenant, Royal Army Dental Corps), B.D.S.Durh., Beechwood, Saltwell Road, Gateshead, 8, Co. Durham.
(**M.**) BRIGGS, Douglas Arthur Howard, B.D.S.Lond., L.D.S.Eng., 31, Crescent Grove, Clapham Common, London, S.W.4.
(**Essex**) BUNKER, Derek Gordon, L.D.S.Eng., 14, South Street, Romford, Essex.
(**E.C.**) CAIELS, Ronald Leslie Edward (Surgeon Lieutenant (D), R.N.V.R.), L.D.S.Eng., New Bungalow, Bourne Hill, Wherstead, Ipswich, Suffolk.
(**M.H.**) COGHLAN, Brendan Mary (Mr.), L.D.S.Eng., 269, Kenton Road, Harrow, Middlesex.
(**S.C.**) COLLINSON, Richard Eric, L.D.S.Eng., Medina Lodge, Cowes, Isle of Wight.
(**S.C.**) CRAVEN, Alan Arthur, L.D.S.Eng., 7, Ethelbert Road, Bromley, Kent.
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(**C.C.**) FRANKLIN, Arthur Denis, L.D.S.Birm., Claypits, Tetchill, Ellesmere, Shropshire.
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(**N.C.**) HARRISON, Arthur Lewis, L.D.S.Glasg., The Avenue, Wheatley Hill, Co. Durham.
(**S.C.**) HARVEY-MOFFATT, Herbert Ronald, L.D.S.Eng., Aston, 34, Stafford Road, Wallington, Surrey.
(**W.S.**) HIGGINS, Nicholas John, L.D.S.Glasg., 59, Allan Street, Coatbridge, Lanarkshire.
(**F.S.**) HUTCHINSON, William, L.D.S.Edin., 1, Foulford Street, Cowdenbeath, Fife.
(**E.L.**) KRINGLE, Cyril, B.D.S.Manc., 80, Shaftesbury Road, Manchester, 8.
(**M.**) KUMAR, Krishan Arya, L.D.S.Durh., 91a, Ladbroke Grove, London, W.11.
(**W.C.**) LEE, Robert Wallace, L.D.S.Eng., 75a, Fore Street, Redruth, Cornwall.
(**N.S.**) MASON, David Kean, L.D.S.St.And., Dental Hospital, Park Place, Dundee, Angus.
(**W.C.**) MAYSON, Norman Joseph, L.D.S.Eng., Abbotsleigh, 19, Rolle Road, Exmouth, Devon.
(**S.C.**) MEPSTED, John Antony, L.D.S.Eng., 10, Sondes Place Drive, Dorking, Surrey.
(**N.C.**) MOFFOOT, Frank George Robertson, L.D.S.Edin., 51, Bishopston Lane, Stockton-on-Tees, Co. Durham.
(**M.H.**) MURRAY, Thomas Colman Joseph, B.D.S.Irel., 86, Cat Hill, East Barnet, Herts.
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(**C.C.**) PUGH, John Haigh, L.D.S.Eng., 191, Heathfield Road, Handsworth, Birmingham, 19.
(**W.L.**) ROBERTS, Norman Victor, L.D.S.Eng., 17, Ruthven Road, Liverpool, 21.
(**M.H.**) ROTH, Felix, L.D.S.Eng., 10, Alma Close, Muswell Hill, London, N.10.
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(**Y.**) SHACKLETON, Margaret (Miss), L.D.S.Eng., 178, Trimmingham Lane, Halifax, Yorkshire.
(**M.H.**) SMEE, Reginald John, L.D.S.Eng., 41a, High Street, Watford, Herts.
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(**E.L.**) SMITH, James Anthony, L.D.S.Eng., 5, Oakleigh, The Avenue, Sale, Cheshire.
(**N.W.**) SMULLEN, Simon, L.D.S.Glasg., c/o Co-operative Dental Association, 50-52, Adelaide Street, Blackpool, Lancs.
(**S.C.**) SWIFT, Patrick Anthony, L.D.S.Eng., 372, Wickham Road, Shirley, Surrey.
(**Essex**) TEBRICH, Alfred, D.M.D.Wurzburg, 253, Cranbrook Road, Ilford, Essex.
(**W.C.**) VOWLES, John Kenward, B.D.S.Brist., Church Lodge, Kingsbridge, South Devon.
(**S.C.**) WEISSBERG, Harry, L.D.S.Eng., 42, Brighton Road, South Croydon, Surrey.
(**M.**) WHARTON, Hilda (Mrs.), D.M.D.Bonn, 55, Bryanston Court, George Street, London, W.1.
(**M.H.**) WHELAN, John Mary Albert, B.D.S.Irel., 171, High Street, Acton, London, W.3.
(**M.H.**) WILDER, Montague Leonard, B.D.S.Lond, 50, Mowbray Road, Edgware, Middlesex.
(**B.B.O.**) WILSON, William Dennis, L.D.S.Belf., 3, High Street, Slough, Bucks.

FORTHCOMING MEETINGS AT HEADQUARTERS

July 22 Finance Committee ... ... 2.30 p.m.
August 11 Committee on Orthodontic Services ... 10.00 a.m.
,, 18 Health Acts Committee ... ... 9.30 a.m.

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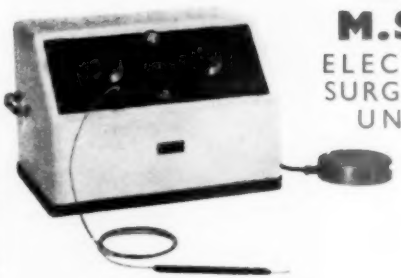

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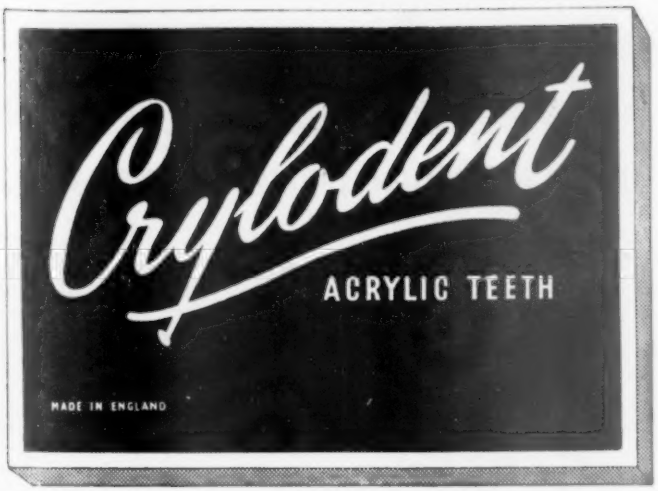

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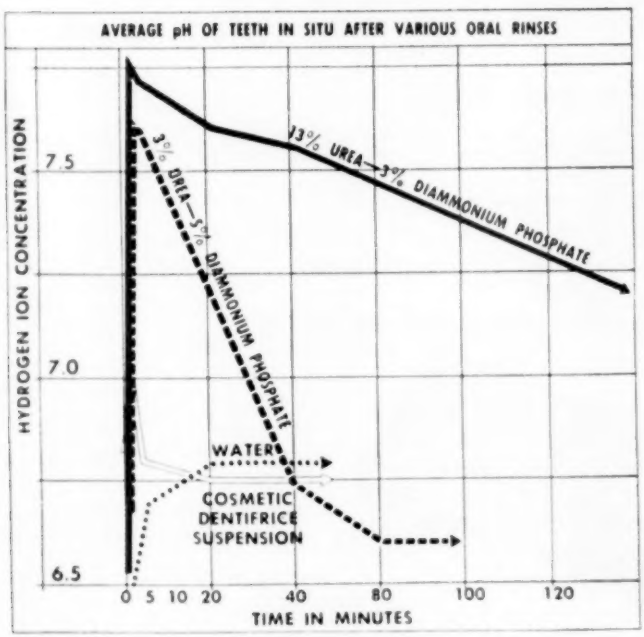

*— Lefkowitz, W. and Singer., A. J., *N.Y. State Dental J.*, **17**, 159, 1951
** — Wainright, W. W., and Lemoine, F. A., *J.A.D.A.*, **41**, 135, 1950

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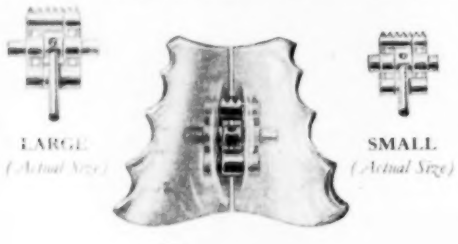

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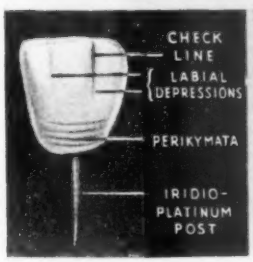

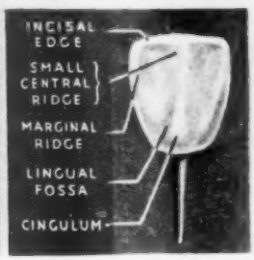

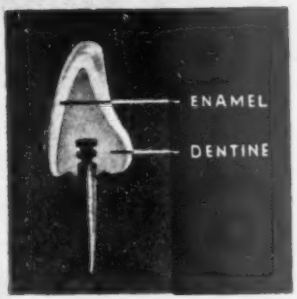

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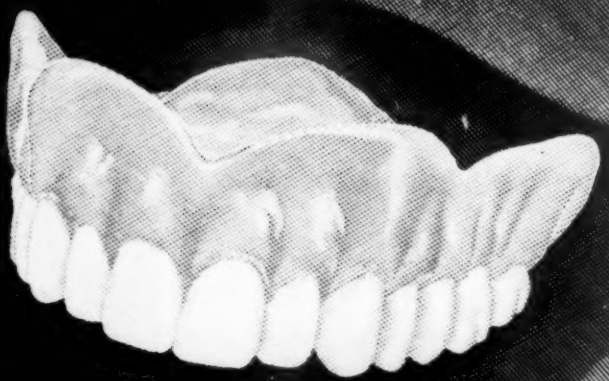

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